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ABSTRACT

Organizational development is explored through this discussion of a series of projects initiated by researchers at the University of Oregon to provide consultation and training to a school district in the Northwest. The primary focus was the improvement of problem-solving skills in the district and the development of a heightened capacity for organizational self-renewal. A cadre of organizational specialists was found to be an important innovation in managing school districts. This book not only documents the functions of such a cadre, but also offers empirical data to guide others interested in the cadre idea. It is divided into three sections covering the story of the particular school district, the underlying theory and technology and the instruments for data collection, and the data on the effects of training and coping with innovation. Details of costs and savings, the experimental design, and the use of nonmetric multidimensional scaling are appended. (Author/WD)

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Organizational Renewal In a School District: Self-help Through a Cadre of Organizational Specialists

Being at Once a Six-Year History, a Display of Data on Outcomes, and an Explanation of an Organizational Method for Improving the Capacity for Solving Problems in Schools and Districts

by
Philip J. Runkel
Spencer H. Wyant
Warren E. Bell
Margaret Runkel

EA 013 779

Center for Educational Policy and Management
College of Education
Univerity of Oregon
Eugene, Oregon
1980

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Acknowledgements

During the Keele project, the organization to which our program of research and development belonged at the University of Oregon was known as CASEA. In 1973 a reorganization took place, and CASEA became the research and development branch of the Center for Educational Policy and Management (CEPM) of the College of Education at the University. Chiefly for sentimental reasons, we have used the name in this book that all the participants knew us by—CESEA.

Richard Schmuck and I were the leaders of the Keele project. Though both of us participated in all phases of the work, Schmuck took special leadership of the consultation and training, while I managed most aspects of the data collection and processing. Daniel Langmeyer, then a Research Associate at CASEA, carried a major burden of consultation and training during 1968-69; he led several important subteams.

A core team of graduate research assistants shared with us the arduous duties of consultation, training, planning, reporting, debriefing, and constant travelling: Ronald Bigelow, Paul MacBeth, Ronald Martell, Isabelle Moser, Jack Nelson, Steven Saturen, Mary Ann Smith, William Starling, Robert Talbott, Neil White, and Spencer Wyant. When we speak later in the book about what "we" did or thought, or about "CASEA's" presence in Keele, or about the reactions of the Keele people to "us," we almost always mean that core team, including Runkel, Schmuck, and Langmeyer. The dissertations of Bigelow, Macbeth, Saturen, and Wyant have contributed to this book. We are grateful to Donald Murray, then of the Washington Education Association, for leaping into the breach twice in 1968 when we needed an extra trainer, and an expert one, in a hurry.

Important logistic support and occasional consultation were given the project by Molly Newcomb and Margaret Runkel. Aid in collecting data came from Rosemary Briggs, James Carlson, Marilyn Hammond, Douglas Moser, Lois Newton, and several members of the Keele Cadre of Organizational Specialists. Chester Cotton and Carolyn Williams helped us frame and revise our hypotheses as we began digging into the data. Dorothy Van Cleef supervised the crew of workers who processed the questionnaires and coded the open-ended answers; her rigorous and unrelenting demand for accuracy saved us from more than one ignominy. William Jones and Steve Buggie gave us expert and important help in analyzing the data. We are grateful for the expert care given our data by Fred Beisse and William Ekstrand of the Computer Center of the University of Oregon. Rosemary Briggs, Cheryl Brown, Lois Newton, and Florence Wanker were the program's secretaries during the Keele project. Patricia Eysenbach and Dorothy Van Cleef doggedly but alertly typed most of the manuscript for the massive technical report from which this book has been condensed. They also typed the manuscript for this book.

We are forever grateful to the participants in the project—to the school people in Abington and Findlay who answered questionnaires with little

hope of ever benefitting from doing so, and to those in Keele who hoped they would not be asked to participate any more than that. We are especially grateful to those in Keele who took the risk of undergoing OD training with us or with the Keele Cadre of Organizational Specialists. They enabled us to gain the experience that underlies this book and that led to later projects.

We would like to express our gratitude by name to the many who risked their time, their comfort, and their very careers with us. In the interest of confidentiality, however, we can only say that we are especially grateful to the superintendent at Keele at the time the project began, to the first coordinator of the Keeele Cadre of Organizational Specialists, and to the counselor in one of the Keele junior high schools who initiated the first contact between CASEA and the Keele district.

Warren Bell, Gordon Lindbloom, and Deborah Pickens joined the program on Strategies of Organizational Change after the field work of the Keele project had been completed. Each of the latter two helped with an early version of a chapter. Together, Wyant, Bell, and I put major shape on the data analyses and upon the organization of the technical report (Runkel, Wyant, and Bell, 1975, ERIC ED 111 107), which contains the complete story of the Keele project. We also wrote and rewrote major parts of that document. Richard Schmuck gave important suggestions and unflagging moral support.

Margaret Runkel lived with the project for its duration as a sounding board and, form time to time, as an observer during training events. It was she who undertook the arduous job of reorganizing, revising, and condensing the three-volue technical report prepared by Runkel, Wyant, and Bell (1975) for a larger audience than the project monitor and other specialists at the National Institute of Education. She was ably assisted by JoAnn Mazzarella, a skilled copy editor. We are grateful to Jon Schaffarzick of the National Institute of Education for his encouragement and friendly attention even after his official duties with us came to an end.

We have already mentioned several people who helped with the analyses of data or gave us counsel. In addition, W. W. Charters, Jr. saved us from some stupid errors and some subtle ones. If we have persisted in some errors, we can only boast that we have done so against the best of advice.

Philip J. Runkel
Eugene, Oregon
1979

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Part I

THE STORY

Introduction

This book tells a story of organizational development in a school district. Part I describes the consultation and training furnished to the Keele* school district by us or by the Keele Cadre of Organizational Specialists. Part III displays data on outcomes. The purpose of the consultation and training was to improve problem-solving skill in the district and leave behind us a heightened capacity for self-renewal. We did not instruct anyone in technical matters such as curriculum, public relations, finance, or collective bargaining. Our premise was that the people in the district had much greater competence in those matters than was being allowed to be brought to bear. Organizational arrangements and interpersonal norms, we believed, were suppressing and sapping the abilities that people in the district could bring to bear on their own problems. We expand on the theory in Chapter 3.

This project fits into a series of field experiments carried out by the program on Strategies of Organizational Change at the Center for Educational Policy and Management since 1967. The first project, conducted with a single junior high school, has been described by Schmuck, Runkel, and Langmeyer (1969) and by Schmuck and Runkel (1970). The Keele project was the second. It has been described in considerable detail in a technical document by Runkel, Wyant, and Bell (1975). The present book reorganizes and condenses that lengthy document, but it also contains additional analyses and some revised interpretations of data. The Keele project was described briefly by Schmuck and Runkel in 1972.

The third project tested whether the methods of organizational development could aid elementary schools in making team teaching work. The results are reported by Schmuck, Murray, Schwartz, Smith, and M. Runkel (1975).

The fourth project established a second cadre of organizational specialists in Eugene, Oregon in 1971. An account of that cadre since its inception, including quantitative data on outcomes, is now being compiled. Several accounts of the formation and work of the Eugene cadre, however, are

*This name and some others are pseudonyms.

available. They include references to the Keele Cadre or comparisons with it. See Schmuck (1977), Bell (1977), Bell and Burr (1976), and Arends and Phelps (1973). The fifth project was a nation-wide study of methods of facilitating local problem solving in schools; see Schmuck, Bell, Francisco, Bassin, and Gross (1979) and Runkel, Schmuck, Arends, and Francsico (1979).

We believe the cadre of organizational specialists to be an important innovation in managing school districts, especially for the purpose of maintaining their capacity to solve their own problems. Indeed, cadres seem reproducible. We have seen several cadres of organizational specialists spring up in recent years, either modelled directly on ours or reasonably similar to them. Information about the groups can be obtained from:

Director of Evaluation and Guidance
Boulder Valley Public Schools
P.O. Box 9011
Boulder, Colorado 80301

Office of the Coordinator of Integration
Buffalo Public Schools
712 City Hall
Buffalo, New York 14202

Associate Superintendent for Instruction
Cupertino Union School District
10301 Vista Drive
Cupertino, California 95014

Director of Administrative In-Service
Eugene Public Schools, District 4-J
200 North Monroe Street
Eugene, Oregon 97402

Director of Human Services
Palo Alto Unified School District
25 Churchill Avenue
Palo Alto, California 94306

Director of Staff Development
Polk County Public Schools
P.O. Box 391
Bartow, Florida 33830

Though others have found the cadre idea promising and have built cadres of their own, few countable data are easily available in print. For that reason, we are glad to offer this book as the beginning of a data base. We hope the volume on the Eugene cadre that we mentioned earlier will not be long in appearing. In the meantime, further countable data stemming from the work of the Keele Cadre can be found in Runkel, Wyant, and Bell (1975), in Bigelow (1971), and in Saturen (1972). Data concerning the work of the Eugene cadre can be found in Bell (1977) and Bell and Burr (1976).

We shall refer frequently to the *Second Handbook* (Schmuck, Runkel, Arends, and Arends (1977) and to the technical report by Runkel, Wyant, and Bell (1975) that preceded this volume. To save repeating those strings of authors, we shall refer to those two books, respectively, as the *Second Handbook* and Document ED 111 107.

Chapter 1

The Early Training

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One day in August, 1967, a junior high school counselor from Keele, a school district in the Pacific Northwest, sat in our office telling us what a mess his district was in. Enrollment was climbing crazily, new top administrators had been hired but nobody knew what they were supposed to be doing, it was next to impossible to get a clear message from anybody about who was responsible for what, and teachers and administrators seemed to be at each other's throats all the time. He had heard of the work of Schmuck and Runkel in a college course earlier that summer, and had persuaded the administration to let him seek our help in straightening things out. By the end of that day he had agreed to urge the superintendent to get in touch with us. We had taken the first step down a path that was to fill the next five years with the joy and pain, discovery and disappointment, exhilaration and frustration of our biggest project for organizational development in schools.

As it turned out, the Keele project resulted from a happy coming-together of Keele's interests and ours. The district obviously needed help in sorting out its many problems, while we were eager to test our theory of experiential training for organizational development (OD) in schools in a large-scale, long-term field research project. We also wanted to develop a more finely honed technology.

KEELE

In the mid-sixties, Keele was riding the crest of a spectacular economic boom, and with the boom came a population explosion that all but swamped the schools' abilities to absorb new students. The town of Keele, about 25 miles southeast of a large city in the Northwest, had long been a minor agricultural town; as late as 1960— when a large dairy-farming area was annexed to the town—it was a local joke that "Keele has more cows than people." Industrial development pushed into Keele early in the sixties, and local manufacturing firms became multimillion-dollar giants. Tendrils of freeways entwined the Keele area as the seemingly never-ending expansion of new industry pushed the nearby megalopolis toward Keele.

As the town grew from 9,000 in 1960 to 14,000 in 1967, enough children entered the school system to fill a new classroom every week. Enrollment rose from 5,500 in 1960 to 9,500 in 1966; the district's assessed valuation rose from next-to-lowest in the state to fourth-from-top; its program budget jumped as much as 28 percent in one year.

Practice had not caught up with population, and in mid-decade the district was still administered by the superintendent and two assistants even though the instructional staff was growing by 18 percent each year. In 1966, the district's eleven elementary schools, three junior high schools, one high school, and 340 teachers were spread over the 71-square-mile district, geographically the second largest in the state.

Unable to cope by itself with the problems of massive growth, the school board hired an outside management-consulting firm to forecast growth through 1975 and to recommend appropriate responses. The consultants found confusion in the central office, fragmented curriculum development, and neglect of other organizational functions. Forecasting a doubled enrollment within ten years, the firm recommended an immediate expansion of the top administrative staff, to be followed by a similar expansion in teaching staff and facilities.

Six top administrators were hired, statements of policy and job descriptions were duly adopted by the board, and school sites were purchased. But as the district tried to carry out the firm's recommendations, problems of confusion and mistrust were only aggravated. In interviews with us, district personnel freely told of power struggles within the administration, communication channels that were clogged with trivia while important information was left unshared, contradictions and confusions in memos from different parts of the central office, and profound mistrust of the administration's intentions. The consultants' report itself was a source of aggravation, one which many teachers saw as a $70,000 boondoggle and as simply another example of high-handedness on the part of school board and administration.

After the management consultants' report was finished, the staff who prepared it did not remain to give any technical assistance in making use of the report. All in all, the 136-page report gave the district a prescription for solving its problems, but it did not give people ways to turn the prescrip-

tion into specific new behavior and relationships. The plan provided statistical speculation about population growth and planning needs, but it did not provide Keele educators with ways to cope with the uncertainties and frustrations that are inevitable in major organizational change. The report contained fine-sounding declarations of the need to improve relationships, but most teachers and principals felt they had been all but ignored by the administration and consultants during the study. It was at this point that the counselor heard that we had strategies for coping with problems like those. It seemed to us that Keele was ready for serious collaboration with us.

Entry and Preliminary Diagnosis

Dick Schmuck and Phil Runkel visited the district in September 1967 on the invitation of the superintendent to discuss collaboration with the top administrators (collectively known as the superintendent's cabinet). Individually and collectively, those people expressed a strong desire for some form of consultation for themselves. They agreed to write a Title III ESEA proposal for funding and to write a set of goals for the project. We agreed to survey resources that might be committed to the project and to begin designing training and research activities. Interviews with the cabinet generaly confirmed impressions of confusion in roles and goals, inabilities to make and carry out decisions, and difficulty in integrating new with old staff members.

In November, the cabinet presented Runkel and Schmuck with a list of six goals. The goals generally suggested that improved interpersonal relationships among top administrators would lead to increased problem-solving effectiveness among teachers. In our view, the major concerns of the cabinet were to improve the clarity and stability of decision making, to upgrade the management of conflict within the cabinet, and to establish freer channels of communication among all parts of the district. In addition, we perceived tension among nearly all parts and levels of the district. The tension was created in part by the relative isolation of units from one another that had resulted from the district's rapid growth.

Meanwhile, we drafted our own goals for the project in organizational and social-psychological terms that reflected our theories about organizations and change as well as our view of the district and its problems. We planned to use those goals as well as Keele's own goals in guiding the direction of the project.* We decided on the following seven goals† to serve as our own guides for designing interventions, explaining our pur-

*A more detailed description of our preliminary diagnosis of the district and the various sets of goals stated by the cabinet during this time are given in Appendix A of Document ED 111 107. (See the last paragraph of this book's Introduction for explanation of the abbreviations "Document ED 111 107" and *"Second Handbook."*

†As our theoretical thinking developed in ensuing years, these goals, originally conceived by Schmuck, were revised to become a list of immediate objectives for organizational development. The revised list serves as some of the chapter headings in the *Second Handbook*. Some discussion of the evolution of our theory appears in Chapter 3 of the present book.

poses, forming hypotheses, and assessing our effectiveness during the project:

1. to increase understanding of how people in various parts of the district affect one another
2. to develop clear communication networks up and down and laterally
3. to increase undestanding of the various educational goals in different parts of the system
4. to develop new ways of solving problems through creative use of new roles in groups (such as changing the role of group leader to make it more effective)
5. to develop new ways of assessing progress toward educational goals
6. to involve more people at all levels in decision making
7. to develop procedures for searching for innovative practices both within and outside the school system.

Some firm agreements about the nature and goals of the project emerged from a second meeting between Schmuck and Runkel and the cabinet in late December 1967; by that time the administration's view had come to resemble our own. It was agreed that the project would last at least two years and would include potentially all the district's employees, and that the focus would be on improving the self-renewing capacity of the district rather than simply improving interpersonal relationships among designated leaders. The tentative schedule called for a round of training events for administrators and other leaders during the 1967-68 year, to be followed by training for school staffs in the 1968-69 year. We stressed our intention to view the project as an occasion for developing knowledge and empirical data, rather than merely as a service project for one district. Within the next few weeks we obtained agreement from top administrators in the neighboring Abington and Findlay school districts to allow us to collect questionnaire data for comparative analyses.

With that formal agreement between CASEA and the Keele administrative cabinet, the project was launched. Over the course of more than four months we had made entry at least into the top level of the district, had begun plans for conducting a major research and training project, and had gathered initial impressions of the multitude of problems besetting the organization. Harder tasks lay ahead for us in the second part of the entry phase, as we still had to secure approval for the project from other influential groups such as Keele's educational association and the principals. We also had to conduct more detailed diagnostic interviews with a wider spectrum of the district's employees. And finally, we had to collect the first wave of questionnaire data.

Extending Entry

We had made an agreement with top administration, but that gave us no guarantee of understanding or support from other powerful groups, notably the Keele Education Association (KEA) and the principals; and we

certainly did not want to repeat the management consultants' mistake of ignoring those two groups.

Senior program members met informally first with principals and then with representatives of the education association in January, 1968. In both short presentations, we outlined the history of the project, reviewed our seven goals, described the procedures and methods of organizational development, and announced the tentative schedule for the first few events. The two short meetings went well in our opinion; all but two principals and all but one KEA representative voted approval of the project. The meeting with principals was helped by one administrator who asked whether they really had a choice; we replied that they certainly did. And we meant it.

A crucial boost to the project came the following month (February) when the school board voted to support the project financially even if the expected Title III proposal was turned down. Later that spring it became obvious that we would not get Title III funds, and several inquiries to private foundations proved fruitless. Without the board's action, we could not have continued.

At the suggestion of the language arts coordinator—a person who gave us a great deal of help in the early stages and who was later to become the first coordinator of the Cadre of Organizational Specialists—we formed a steering committee as a local liaison. The committee included representatives of several parts and levels of the district. While it nominally had power of approval over our training plans and did serve some local liaison function, the committee was never a very significant force in the project. With those steps taken, we moved on to the tasks of gathering diagnostic and research data and designing the crucial first events.

Diagnosis Before First Training

We interviewed 50 members of the district, including representatives from all professional groups, in March 1968. Recurring themes in these interviews confirmed and expanded on the problems we had heard from administrators in our earlier discussions. The people we talked to repeatedly expressed doubts and confusions about the roles, responsibilities, and intentions of the newly-expanded cabinet. Decision making remained a mystery that created mistrust as employees heard confusing and even contradictory reports from different parts of the central office. Official communications channels were too clogged with trivia to allow important information to get where it was needed in time to be useful. The district's rapid growth and other problems had produced pervasive feelings of isolation, impersonality, and tension, with obvious polarization on nearly all possible dimensions—line versus staff, new versus old, teacher versus administrator, and so on. Those tensions were aggravated by the chronic uncertainty about money, since the school district had to go to the voters for nearly half its operating budget each year.* Finally, our own role and intentions were likewise suspect, with several people perceiving us either

*A NO vote by 40 percent of the voters will defeat a school budget in Keele's state.

as yet another management consulting firm or as information runners for the central office. Yet, our interviewers felt that a sufficient number of people had been candid enough to provide useful information for planning the first major event.

ORGANIZATIONAL TRAINING FOR ADMINISTRATIVE GROUPS

We carried out four training events for district personnel with key line and staff functions between April and December 1968. (We use "line" to mean those who are part of the direct chain of command in the system from the superintendent on down; we use "staff" to mean those who advise or assist line personnel in the chain.) In those events, organizational development training reached all the top administration, principals, leaders of the Keele Education Association (KEA), and the school board. The events had three immediately helpful outcomes. First, they gave a large number of the district's employees experience in the strategies and activities of laboratory training for organizational development. Second, they increased the readiness of many members for the later training by us and by Keele's Cadre of Organizational Specialists. Third, they interested a number of people who later joined the Cadre.

Key Line Personnel

The first event was a week-long workshop in April of 1968 that involved nearly all key line personnel, including central office administrators, principals, and leaders in the KEA.

We believe that our decision to train key line personnel first was very important. We did not want to train only the top administrators, because we did not want to make those in lower echelons feel that we thought administrators' roles were more important to the project than their own. On the other hand, we did not want to train a group randomly chosen from all levels of the organization, because we wanted, from the beginning, to take organizational structure into account. Our solution was to begin by training the "backbone" of the organization, the key line personnel from the superintendent on down. In that way, we were able to maintain the structural visibility of the organization and highlight problems that groups or subsystems in the organization might have with other groups.

Our goals for the first training event were to establish widespread understanding and favorable attitudes about organizational development, to identify intergroup problems (especially across hierarchical levels) that would provide the content for subsequent training in communication and problem-solving skills, and to establish norms for collaboration within and across the various participating job groups. We hoped, too, that identification of intergroup problems would spur a desire for further training. Our general strategy for the event was to bring together the various job groups in an "imaging" exercise* that allowed each group to tell the other

*The imaging exercise is described in Chapter 5 of the *Second Handbook*.

groups about the organizational problems they perceived to be plaguing their attempts to collaborate. We augmented that focus on substantive issues with training in communication and problem-solving skills and attention to a variety of other issues such as influence and decision making. With the superintendent's cabinet, especially, we focused on intra-group issues in communication, norms, and influence.

Participants in the April event included the nine members of the superintendent's cabinet, present throughout the week; 21 building administrators, who attended part of the event; and 29 teachers, including elected officers of the Keele Education Association and at least one teacher from every building in the district, who attended for two days only. In all, some 65 persons received training in the first event.* We think the week was crucial in building supportive attitudes in favor of organizational development among key district personnel: most participants said they looked forward to more OD training, none refused to allow later OD consultation in subsystems in which they had prominent membership, a few made specific requests for training their subsystems, and seven later became members of the Cadre. Looking back, the event seems to have been a success in two ways. It opened up some long-standing organizational conflicts for examination and systematic problem solving, and it built the support needed to continue effective OD consultation in the district.

Key Staff Personnel

The second major training session was a three-day workshop in September of 1968 for some 70 members of the departments of Student Personnel Services and Curriculum. Our intentions—similar to those for the April workshop—were to use the imaging procedure as the major vehicle for generating information that could be used in systematic problem solving on organizational issues within and between the two departments. And because principals were key "customers" of the two departments, we asked principals to join the workshop for half a day.

The workshop received a good review in the district's newsletter, and members of Student Personnel Services reported that many issues raised during the three days were still being worked on several weeks later. Members never, however, carried out plans for follow-up training. After a survey of the two divisions' members by their directors, we were informed in December that they had decided to commit their energies to determining behavioral objectives, in accord with the district's emphasis on Management by Objectives.

School Board

The third event grew out of a minor crisis that later assumed major proportions and occupied a good deal of the district's energies during the 1968-69 school year. Some social studies teachers at one school had invited a speaker from a redical left political party to address their classes. On

*For details of the training, see Chapter 2 of Document ED 111 107.

the scheduled day, a flurry of telephone calls convinced the assistant principal to cancel the speech. Leaders of the Keele Education Association perceived the cancellation as "yet another" instance of highhandedness by the administration and school board, and asked us to act as consultants and mediators during a meeting between them, the cabinet, and the school board. We hoped to seize the occasion to introduce problem-solving skills and procedures to the participants.

The cabinet, school board, and several teachers and principals met with us one evening in early October to begin the problem-solving sequence in mixed groups, each group containing representatives of all four kinds of roles. Although the session achieved some clarification of the conflict, the participants did not seem to perceive that kind of meeting to be a means for solving problems in the future.

Business Division

Our final event for administrative groups was a two-day workshop in December 1968 for the head of the business office and six department heads within the division. Beginning with some training in communication skills and an exercise in group processes, the participants moved on to systematic problem solving on issues within the division and between it and other parts of the district. The participants worked rather fitfully and unskillfully at the tasks, although they seemed pleased with the two days' activities by the end of the workshop. A survey of the division's members in the spring of 1969 showed that most felt communication had been improved by introducing weekly meetings and more informal contacts among divisional members, but we think the results of our training were minuscule.

Summary

The four events we conducted for administrative groups varied widely in their nature, scope, and effects. None can be called thoroughly unsuccessful, though the first two probably had greater helpful effects than the last two. Nearly all central office professional personnel were involved in at least one event, the district's principals were part of two, and representatives of the KEA and each of the district's schools were involved in the two larger events. We believe that some useful organizational changes can be traced to those events (albeit probebly on a smaller scale than we had hoped), and that they certainly increased the readines of various parts of the district for the subsequent training by us and the Cadre. That last result was important. Several people who participated in these events later became Cadre members, while others turned out to be supportive participants in subsystems which the Cadre trained. We had demonstrated the nature of training for organizational development to a wide spectrum of the district's employees, and many of them experienced personal and organizational benefits from the training. By the fall of 1968, our focus had shifted to the schools, and the beginning of interventions for school staffs was under way.

INTERLUDE: TURMOIL AND CHANGE

The effects of nation-wide political disturbance and educational change were evident in Keele as we began training school staffs in the fall of 1968. First, much of the administration's energy was devoted to forming policies that would lessen the pressure put on it by the more conservative segment of the Keele community. Second, the district launched a number of innovative programs that affected our work. Meanwhile, the area's economic boom continued at a feverish pitch, although signs of an impending collapse began to appear by mid-year.

Much of the Keele community was deeply conservative politically, and the school district had been periodically attacked by right-wing groups on such issues as sex education, psychological testing, and counseling practices. When the crisis over the scheduled speech by the left-wing political candidate (the impetus for our third training event) erupted, it marked the beginning of a year-long controversy. The KEA, the administration, and a group cahed the Citizens' Advisory Council held meetings all year long to create a policy on controversial speakers that would satisfy all segments. Also, the long-standing battle over sex educaiton flared up again, and by the end of the year the Advisory Council was thoroughly dominated by opponents of sex education. (One team from the newly formed Cadre tried to give some training to the council, but little came of it.)

ORGANIZATIONAL TRAINING FOR STAFF OF FIVE SCHOOLS

The growth of the district continued at a rapid pace: a new high school opened in September 1968, two new elementary schools opened during the year, and three more elementary schools were in various stags of design or construction. All the new schools were designed to accommodate more collaborative teaching arrangements and more flexible instruction for students, and two older schools were remodelled to accommodate teaming. Still, several elementary schools were double-shifting to handle the overflow of students. Also, the district hired instructional aides for teachers for the first time. The administration embarked on an ambitious program of management, supervision, and instruction by objectives. Against that background, we began work with the staffs of five schools in the fall of 1968.

We gave training to all or part of the staffs of two elementary schools, a junior high school, and two high schools during the 1968-69 school year. Our crew of graduate research assistants was divided into five relatively autonomous teams to gather diagnostic data, feed the data back to their clients so that both groups could jointly establish intervention goals, and carry out the training.

Though all the schools in some sense "volunteered" for the training, we and the district's administrators made the initial selection of the schools to be trained. We then conducted conferences with the school principal and with the staffs, again emphasizing our intention that participation be

voluntary, but it was clear that a good deal of the "volunteering" was a response to the administration's request that the schools "cooperate." We did keep the back door open, however, and some of these schools dropped out of training before we, ourselves, would have terminated the projects.

Keele 05: An Old Elementary School

This older elementary school was chosen because we had been told the staff was committed to team teaching arrangements. We soon discovered, however, that teaming was not the predominant mode of instruction, although the staff was loosely organized in teaching units, nor did the staff as a whole actually expect to be teaching in teams in the near future. The staff's major concern during the year was trying to work around the construction crews remodelling the building to facilitate later team teaching.

Our trainers interviewed the principal, introduced the staff to our project in late October of 1968, and returned to interview teachers in mid-November. The staff included 20 teachers, four aides, and five part-time specialists; the school had approximately 725 students. The interviewers discovered that while most teachers felt good about the principal and the school, they experienced problems in making decisions and in bringing problems to the attention of the faculty and were unable to coordinate their work effectively. The principal felt that the major restraining forces were teachers' lack of skill, experience, and commitment, as well as unresolved authority relations between himself and the staff. An inability to acquire needed resources, assistance, and direction from the central office also hindered effective coordination of effort.

When our team visited the school in January 1969 to report the results of their interviews and to set intervention goals jointly with the staff, the faculty seemed unprepared for the meeting and, in fact, was unaware that it was scheduled! During the meeting our crew noted an obvious division between older and younger teachers that made collaboration between them difficult, and a widespread lack of clarity about the overall direction of the efforts of everyone.

When two members of our crew talked informally with the principal in February, he admitted that he was reluctant to start the training and gave the continued disruption from construction crews as the reason. Nevertheless, we scheduled a date in March for training, and agreed to emphasize communication skill development as a step toward strengthening the faculty's problem-solving abilities and the team structure. We thought some training, even if brief, would be valuable as a prelude to further work by the Cadre or as preparation for the faculty's participation in a workshop on team teaching scheduled for the following summer.

At what turned out to be the only training event we conducted for this school, the morning was spent in practicing communication skills while trying to reach consensus on the school's goals. In the afternoon, the faculty was divided into two groups, and each did a role-playing exercise on the issue of bringing problems before the faculty. The total faculty then

got together to role-play a situation that focused on relations between the principal and the staff. Finally, staff members listed on large sheets of newsprint forces that helped or hindered effective teaming. The poster-size lists were then displayed on the wall.

Some staff members complained of the "artificial" nature of the day's activities, but the staff as a whole seemed genuinely enthusiastic and pleased with its accomplishments during a "force-field" analysis,* in which they listed forces working against solutions of their problems and forces facilitating their solutions. They expressed interest in future work with us, but no definite plans were made. Ultimately, no other training event was conducted.

We learned from informal conversations with the principal later that year that the staff had made good progress toward strengthening teams, had begun work on curriculum development, and had initiated a school-wide faculty council. He grudgingly allowed us "fifty percent of the credit" for the faculty's progress, but saw no further need for our services. After CASEA left the district, however, the staff received a small amount of additional training from the Cadre.

We were never particularly pleased with our training for K05. We repeatedly sensed a moderate animosity from the principal. (We later learned that the principal refused to let one of his teachers, a member of the Cadre, make time for Cadre duties during the school day.) The school received the least amount of training of any school in the district, and repeatedly appeared low on our quantitative measures of outcomes (see the data reported in Chapters 5 through 8).

Keele 11: A New "Open Concept" School

Under construction most of the 1968-69 school year, school K11 was the first of the district's new "open concept" elementary schools. The central feature of the building was a large resource center, and the teaching wings had movable interior walls. Meanwhile, the staff was housed in a nearby older school—and was double-shifting with the staff of that school until March 1969. When we first made contact with the staff in October 1968, we discovered that teaching teams had not yet been formed—contrary to what we had been led to believe.

From our interviews in October and November 1968, we learned that conflicts between line and staff were acute in the school. Specialists in the building were unsure whether they were responsible to the principal or to their central office supervisor. There was widespread uncertainty about how to go about setting up teaching teams, especially because the principal was said to provide little direction, and several individuals were perceived as disruptive. Role clarity, decision making, and communication channels were all confused. There seemed to be substantial anxiety about undergoing our training; we were later to learn that many staff members perceived our intervention as something imposed on them by the central office.

*See pp. 294 and 302-303 of the *Second Handbook* for description of force-field analysis.

When we met with the staff later in November to rank their concerns and establish intervention goals, we saw factions and coalitions form to advance the interests of parts of the staff. Our goals for the first scheduled intervention, in December, were to introduce the staff to our methods, get them to start looking at their own behavior, and begin work on a problem-solving sequence.

Staff members did begin to discuss their own processes as the first event led off with a consensus exercise.* Feedback on helpful and unhelpful behaviors was shared in grade-level groups, while we introduced and modelled communication skills, and the total staff then formed a fishbowl arrangement (an inner circle of speakers surrounded by an outer circle of listeners) to discuss ways of encouraging helpfulness among staff members. On the second morning, three heterogeneous groups began problem-solving work on issues of setting up teams, bringing problems to the faculty's attention, and using resource persons effectively. A quick debriefing of the day-and-a-half event brought predominately favorable reactions to our work.

Part of our crew met with the staff in February 1969 to review progress since the December event and to plan the second training session, scheduled for March. Staff members reported some specific events that signalled progress, and we agreed that the focus of the March training would be problem solving by individual teams.

The workshop in March opened with an exercise in one-way and two-way communication,† but most of the day was spent in problem solving by the teams. Finally, team representatives formed a fishbowl to review their day's work and to discuss future involvement with us. That activity produced no definite plans for further work with us, and revealed that there was no consensus on the value of our work with them so far. Our trainers felt that the problem solving by teams had been relatively successful, but the faculty showed little skill in interpersonal processes, decisions were difficult to come by, and the manifest tension and disorganization among staff members were studiously ignored.

Our experience in this school clearly showed that a successful training event—one that produces organizational change and an increased capacity for further changes—need not be accompanied by good, warm feelings toward the training crew. (The reverse is also true: good feelings don't necessarily guarantee a successful, change-producing event.) When two members of our crew talked with the principal later in the school year, he reported that the staff had made good progress toward teaming, but he refused to grant us any credit for it. Our people picked up clear messages of hostility from the principal, as they had all through our interaction with him. We also began to hear indications from several sources that many of the staff were seriously displeased with our work with them. When we queried the Cadre's coordinator some time later, she reported that while

*See pp. 344-350 of the *Second Handbook* for description of some consensus exercises.
†For exercises to develop two-way communication, see Chapter 3 of the *Second Handbook*.

a majority of the staff had moderately favorable feelings toward us, a minority was stridently opposed; and it was the voice of the latter group that was being heard.

Despite that animosity, *the staff later requested and received a substantial amount of training* from the Cadre. Further, after more training from the Cadre, this school ranked considerably higher than the average elementary school in the district on many of our outcome measures, as will be seen in Chapter 5 through 8. School K11 provides some of the evidence for our belief that the Keele Cadre, on the whole, did a better job of training than we of CASEA did. That is, despite our pessimism about the effects of our own training, the school showed very favorable scores on our outcome measures after further training by the Cadre.

Keele 23: A Junior High School

This was the only junior high school trained by us; there was no compelling reason for choosing it over the other two junior highs, though the principal had been a member of the short-lived steering committee for the overall project. In fall 1968 the school had a professional staff of approximately 40, a few part-time aides, and some 780 students.

The two members of our crew who interviewed staff members in late October 1968 heard about problems of two kinds: first, within the building there was a lack of clear goals, of coordination between departments, of knowledge about what other faculty members were doing, and of understanding of the roles of building administrators and department heads; second, the staff felt a lack of communication and support from the central office, and their instructional schedule was determined primarily by the arrival and departure of school buses.

When one of our trainers met with the faculty to rank concerns and set goals, he was pleased that the work was helped by persons who had previously been in our training events. Several teachers expressed enthusiasm for the training, and some informal discussions continued after the scheduled ending time. At a meeting with the principal later in November, we devised a rather fragmented training schedule that was dictated by the need to work around fairly rigid time schedules. We would work with members of the various departments, with teachers who happened to have a common free period, and with the administrators and department heads. The total staff could be brought together only for a 50-minute period at the end of the day, but a Saturday was also set aside. Over the next four months we conducted sessions of varied lengths for all or part of the faculty.

The first event was a pair of meetings with the school's informal "cabinet" — composed of the principal, his assistant, the two counselors, and the half-dozen department heads. Our plans for the first meeting (on two successive mornings in late January) were to begin problem solving on the issues identified in faculty interviews earlier and to examine interpersonal processes within the cabinet. During that first meeting a great deal of time was spent in confronting (or avoiding) interpersonal conflicts among cabinet members while the group slowly warmed to the task of

examining the problem statements from the interviews. The main product of the meeting was an agreement to bring another member from each department to the next meeting in early February.

In mid-February, we met with teachers who had in common only the fact that they had the same free period. We gave the same kind of skill training to each of the seven free-period groups: we would present examples of communication skills, conduct the "nonverbal cooperation" exercise,* and debrief the activity. The groups seemed to move through the exercise, as expected, with little cohesiveness, lots of tension, very little interpersonal skill, and some help from staff members who had previously been trained by CASEA. The climax of the day was an inconclusive exercise on one-way and two-way communication. Still, our crew felt the day was partly successful in focusing apprehension so that departmental groups would be primed for the problem-solving activities we planned for the following day. We were somewhat cheered when a group of teachers quickly initiated a party to continue discussions of their processes.

On the next day we met with the departments separately to introduce communication skills and to initiate problem solving with statements of the present situation and of goals. Our trainers were generally pleased with the departments' progress toward specifying problems and goals, and noted evidence of cohesiveness and commitment to a common course of action within several departments. Departmental chairpersons reported the results of their work during a meeting of the entire faculty at the end of the day. The staff seemed bored and wrung out, and plans to list restraining forces were abandoned, with the understanding that the individual departments would make these lists of restraints prior to the next intervention set for a week later.

The departments continued problem-solving work the following week, each meeting with us for a 50-minute period, with varied results. At the end of the day, departments paired off to brainstorm action plans to overcome restraining forces and to share feedback of process. Our observers reported high involvement by staff members and good quality of action plans, although one department was too beset by interpersonal conflict to be systematic about solving problems. It met separately with one CASEA trainer, but could make no progress in resolving the conflicts.

The final session included the total staff in a day-long meeting in mid-March. During the morning, departments again teamed up to describe their plans for action while our crew encouraged the use of communication skills. In the afternoon, two departments made presentations to the entire staff on school-wide problems, and some decisions were made on solutions to both problems. Reactions expressed during the debriefing session that ended the day were generally favorable; interest in more work with CASEA was voiced, though there seemed to be some concern that their plans would not be carried through.

In assessing the training, our crew felt we had improved problem-solving

*See pp. 131-133 and 209 of the *Second Handbook* for description of the non-verbal cooperation exercise called the Five-Square Puzzle.

capacities at the departmental level and had established some new norms for communication, but that we had fallen short of making school-wide changes. Major problems had been clarified, some consensus on the role of department heads had been achieved, and many individuals had received useful feedback on their behavior. In contrast, we had not effected any change in the principal's leadership style. His lack of decisiveness and his constrained personal style loomed as major blocks to change in the school. Role clarity continued to be a problem, and rigid authority relations still prevented initiatives by teachers. We learned later, however, that two staff members conducted some problem-solving sessions for the staff and that teachers more than once initiated an action plan and presented it to the administration, a novel procedure for that school.

The work at K23 was another case where more happened than we thought likely at the time. Bigelow (1971) recorded the oral interaction between teacher and students in thirteen classrooms of K23 before and after the training, and also recorded the interaction in thirteen classrooms in another junior high school at the same time periods. He found significant differences favoring K23 in the nature of the interaction. Bigelow's findings concerning the teachers' "dominative" behavior were especially impressive. *No* teacher in the comparison school changed as much toward "integrative" statements (and away from "dominative" statements) as the teacher in K23 who changed *least* in that direction. We gave the teachers no training in classroom behavior. The transfer of our training in communication to the classroom could only have been spontaneous.

The Two High Schools

In the high school K31, we never worked with any group that had the marks of a subsystem with particular tasks of its own. Our diagnostic questioning of the staff made it all too clear that no group in the school could agree upon a need for our services. Two department heads, however, had attended our training session in April 1968 and retained a favorable feeling toward us. A meeting with those two department heads and three others led, eventually, to some work with department heads as a group. We enabled them to arrange regular communication among themselves (something they had not had before), both through improved face-to-face communicative skill and through a revised schedule of classes that gave them a free period when they could all meet. We also helped them communicate directly with central-office administrators during a period of crisis over sex education. The rest of the school, as far as we know, was affected not at all.

The high school K32 was new in the fall of 1968. Its members had undergone 16 days of sensitivity training that August—training not conducted by us and not a part of our project. After diagnostic interviews and discussion of data-feedback in October and November, we discovered severe conflicts over goals and pedagogy that had been opened up in August but not resolved. We worked with those conflicts during the rest of the school year. We spent a good deal of time with administrative groups and depart-

mental groups, but only about four hours with the staff as an entire body. We believe we did help the principal's cabinet to become stronger and to coordinate their efforts better, but we were unable to help the staff resolve their conflicts productively. As was the case in the other two secondary schools, we failed to bring together the right subsystems often enough.

SUMMARY

In general, few of the systemic changes we had hoped to bring about in the schools resulted from our training. We had planned to improve clarity and stability of decision making, to upgrade the management of conflict in schools and within the superintendent's cabinet, and to establish freer channels of communication among all parts of the district. None of those objectives was adequately achieved. We ourselves benefited immeasurably, however, because we improved our knowledge, theory, technologies, and skills. Perhaps the most useful function served by the training was successful demonstration of the strategy of laboratory (experiential) training for organizational development, so that many staff members experienced the training and its potential benefits. We are convinced of the efficacy of our demonstration because several of the schools we trained later asked for additional training from the Cadre that we established in the summer of 1969. Further proof of that kind of success is that many of the members of the Cadre came from schools to which we had given training—even from schools in which we had "failed."

At this point, the reader may wonder, given this somewhat discouraging record of training, why we undertook to write a book about our exploits and their outcomes. There are several reasons. First, the most exciting part of the story is yet to come. Establishing the Cadre of Organizational Specialists was an important experiment in itself, and a very successful one in many ways. We shall tell its story in the next chapter.

Second, our questionnaire data tell us that the training we and the Cadre gave to schools did have some measurable effects; we shall present the data in Part III. Third, the lessons we learned in this project led to better designs in later projects. In a project that got under way in 1970, for example, we incorporated revised sequences and amounts of training that produced much stronger effects than our efforts in Keele. The 1970 project is reported by Schmuck, Murray, Schwartz, Smith, and M. Runkel (1975). Taken together, the present report and the one on the 1970 project offer a wealth of evidence on methods of facilitating problem solving and organizational change in schools.

Fourth, both our experience in the field and the data from the Keele project enabled us to refine our methods of consultation and training. When we tried out the refinements in the 1970 project, we were ready to put what we had learned into the first *Handbook of Organization Development in Schools*, which appeared in 1972. Still later learning led to the *Second Handbook*.

In the late spring of 1969, our role in the life of the Keele district shifted

from one in which we provided training directly to schools and central-office subsystems to one in which we began building a *new* subsystem—the Cadre of Organizational Specialists—that would continue the work of self-renewal.

Chapter 2

CASEA Withdraws: An Internal Cadre Is Launched

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In the spring of 1969, the most exiting and satisfying part of the Keele project still lay ahead of us as we prepared to launch a Cadre of Oragnizational Specialists.* From the first, we had hoped to leave behind us a corps of skilled persons who could carry out the functions we thought necessary to a self-renewing capacity. We felt ready to begin that final phase of the project in the spring of 1969, and we distributed information and application forms throughout the district.

Our hopes for wide distribution of the application forms were somewhat frustrated by the district's clogged communication channels, and we were disappointed by the relatively small number of applicants, since we could not select applicants as judiciously as we had hoped. Neverthe-

*The Cadre called themselves the Communication Consultants. Here, however, we shall continue to label them the Cadre of Organizational Specialists to conform to our other writings on the subject.

less, we made a final selection of 23 persons. The first Cadre included five central-office personnel and eighteen others: teachers, counselors, and administrators from eight of the district's 22 schools. We had the administration's support and commitment to provide the Cadre with funds for a half-time coordinator, released time for Cadre activities, and a small budget for supplies.

LAUNCHING THE CADRE, JUNE 1969 TO MARCH 1970

The first and major training event for the specialists was a two-week workshop in June, 1969. The first week was devoted to a variety of exercises designed to develop the Cadre into a cohesive group. Individual specialists were given experience as co-trainers in exercises in communication skills, decision making, observation of group processes, and the like during the first part of the first week. Temporary teams of specialists designed exercises to focus on particular consultative skills and then conducted them for their colleagues. During the second week, intervention teams formed and members of each team shared resources and expectations, while the Cadre as a whole generated a list of potential clients for the first training events. Each team then selected an actual client, made entry, gathered diagnostic data, and returned to the Cadre's training site to review its data and make plans for their own first training interventions.* During the next several months the intervention teams carried out a variety of training events with mixed results.

The most successful team worked with the staff of the district's second open-concept school (K12)—the school that we came later to regard as the star of the project. Like school K11, the staff was in temporary quarters for the 1968-69 year. In the fall of 1969, the staff moved into its own building, a structure well designed for collaborative teaching. The principal—himself a Cadre member—communicated his enthusiasm for OD training to his staff. The specialists and the staff had clear mutual expectations about the goals of the training, and the training fit well the needs of the newly formed staff. The Cadre team conducted a two-day workshop for the staff before school opened in August of 1969, focusing on communication skills, group processes, and organizational problem solving. Three half-day sessions of follow-up training were held during the fall.

A second team created a very successful two-course sequence in communication skills and group processes that was repeated annually as an in-service course for individuals. This team originally planned to work on relationships between secondary principals and the assistant superintendent for secondary education; when the assistant superintendent resigned and was not replaced, the team was able to switch its focus smoothly. The courses became the primary route to Cadre membership. A third course

*The details of the initial training appear in Appendix 4-D of Document ED 111 107. An account of the rather similar training of the Eugene Cadre appears on pages 532-535 of the *Second Handbook*.

dealing with consultation skills was later added to the sequence, and by about 1974 about half the Cadre's members had become specialists as a result of those courses.

A third team had relatively unsuccessful experiences with the staff of a junior high school. The intervention was initiated by the team when a Cadre member reported that the faculty of the school was polarized by the issue of student conduct. The team gathered information and conducted three training sessions before the specialists were rather forcefully told to leave. From our records, it seems that the Cadre team, the principal, and the staff were unclear about the nature of the problem, the goals of the intervention, and how to proceed with the training. The student conduct problem turned out to be a non-problem, but the team learned that too late. The team planned its efforts to culminate with problem solving on the discipline issue, but when this topic was introduced, the staff was surprised to find that the specialists still thought it a problem!

Other interventions initiated during the June training seemed to sputter along for a while and then fizzle out. One team hoped to work with the Cadre's Community Advisory Group in the hope of finding ways to improve communication between the district and the community. Another team opened discussions with department heads in the older high school, while a third team took as its target improving relations between principals and Student Personnel Services staff. All three teams made some progress, and a team did hold two short training sessions with the Community Advisory Group, but by early 1970 no traces of those three beginnings were to be found.

Our prominence faded over the months as we gave over initiative to the specialists and prepared to withdraw from active participation in the district's affairs. Each of the intervention teams had been assisted by one or two members of our CASEA crew who took consultative and supportive positions within the teams, and leadership gradually passed to the specialists themselves.

In the interventions that were staffed jointly by the Cadre and CASEA, it is difficult to say how much of the contribution to success or failure was made by the Cadre and how much by CASEA. We are sure, in many instances, that we were helpful, and even at times pulled chestnuts out of the fire. On the other hand, we made mistakes, too. In the case of the junior high school mentioned earlier, two of our crew shared in making the erroneous diagnosis and shared, too, in carrying on a design for intervention that must have had some of the feeling of the proverbial bull in the china shop. One thing is clear from data that will be presented in later chapters: the interventions in which the Cadre shared, or which they conducted themselves, generally had more favorable results than the interventions we conducted alone. That fact gratifies us; teachers who are outshone by their students can indeed be proud of their teaching.

On the final day of the initial June training event, we had set up a structure comprising a coordinator and steering committtee to provide decision making governance of the Cadre. Over the next seven months the special-

ists came to exert strong and expert control over their own direction. We were invited to participate in only two further short training events the specialists designed to build their own skills and to increase the group's cohesion.

As the time for our withdrawal from the district neared, we felt confident in the abilities of the individual specialists and in the Cadre's abilities as a team to maintain itself and provide training for organizational self-renewal to the district. Of course, like most new things in schools, the Cadre had begun with the buoyant enthusiasm that usually marks a new attempt to change schools. On the other hand, our confidence was tempered by the knowledge that several of the persons we trained had become inactive shortly after the school year started. We were worried, too, by the heavy workloads being assumed by the active specialists, and by the difficulties that we knew any new subsystem has in maintaining itself over time. By the end of the year, 17 of the 23 original specialists still gave the project high priority, but they did so only at the cost of spending considerably more time than they had anticipated.

INTERLUDE AND CRISIS

The booming single-industry economy in the Keele area began to sputter in mid-1968. By 1970 recession was in full swing; unemployment rose to 15 percent. Assessed valuations and tax revenues fell off drastically.

The recession could not have come at a worse time for Keele. In November 1969, an auditor in the state education department informed the district that he had discovered a shortage of nearly a million dollars in the district's operating budget. The error was traced to the district's business office and to slippages in accounting procedures among the many county and state agencies involved in monitoring the school district's budget. When a later audit revealed the deficit to be closer to $1.85 million—out of an operating budget of approximately $12 million—the intensified crisis shook the district. Programs were cut, spending was curtailed, jobs were eliminated, salaries were cut, and in-service training was sharply reduced. The administration planned to cut the certificated staff by nearly 100 positions, even though an increase in enrollment was anticipated.

Tempers flared and disputes engulfed the district. A group of citizens unsuccessfully attempted to sue individual school board members, and later began a movement for a recall election. School psychologists and counselors brought suit against the district to prevent the reduction of their salaries. Top administrators in some cases left the district rather than return to classroom jobs. Voters decisively voted down a special tax to cover the deficit; the measure was defeated by nearly three to one.

The spring was a tense one for us as negotiations between the education association (KEA) and the administration threatened to eliminate all support for the Cadre. However, because the specialists were seen by many as valuable to the district, some support was assured. The superin-

tendent later told us, in writing, that training by us and the Cadre had been major assets in helping the district come through the budget crisis.

To our delight, the Cadre weathered the crisis; it survived as a distinct subsystem and it continued to provide valuable service to the district. It gave training and consultation to a large proportion of important groups in the district, and it was able to renew its leadership and membership successfully. Moreover, specialists began using intervention techniques that we had not taught them.

ACTIVITIES OF THE CADRE FROM MARCH 1970 TO JUNE 1974

From the time of our withdrawal from Keele in early 1970 until the close of the 1974-75 school year, the specialists' influence was felt in nearly all parts of the Keele district and in many places outside of the district. Despite forces in the Cadre and in the district of the sort that often spell the demise of an innovative effort, the Cadre maintained and renewed itself.

Over six years, the specialists passed through periods of both extensive activity and virtual stagnation. The period from its creation through the fall of 1970 was the Cadre's busiest time in terms of sheer activity. The low point was undoubtedly the fall of 1971, when the Cadre was nearly inactive, and the entire district coped with adjusting to a new superintendent. At other times, the Cadre was moderately to very busy with training for school staffs, administrative departments, and other groups, as well as with the communications courses and efforts to improve its own procedures and functions.

Work with Schools

The Cadre gave OD training or consultation to ten of the district's 15 elementary schools, one junior high, and one senior high school. Cadre training helped launch three new schools, while other interventions helped established staffs refurbish interpersonal and problem-solving processes, meet organizational crises, and examine survey-data feedback.

By spring 1970, the specialists (with our heartfelt agreement) had made the wise decision to intervene only by invitation; they would no longer designate a target and attempt to convince the group that it needed OD. The coordinator did, however, actively circulate information about the Cadre's services through formal and informal channels. Several principals asked about possible workshops with the Cadre in the summer of 1970.

Even as those events were taking shape, an organizational crisis demanded immediate attention. One principal discovered in May 1970 that more than a dozen teachers planned to resign or transfer because they were dissatisfied with his leadership. One specialist interviewed several teachers, met three times with the principal and a group of teachers to discuss ways of improving communication, and reported to the principal feedback she thought he needed to hear. The situation was greatly im-

proved. All but two teachers withdrew their resignations, and the staff requested more formal training in August of 1970.

Seven elementary schools were trained in August 1970 in sessions ranging from a day to a full week in length. Training teams for each school had been selected by the clients, and intervention goals were jointly set by a group of faculty and the Cadre teams. In two open-concept schools (K14, K15) about to open for the first time, exercises often focused on expectations about goals, norms, and roles in the new collaborative teaching arrangements. At the other schools—in their first to third years of operation—the training focused on refurbishing communicative skills and problem-solving skills, on reviving group processes and trust, and on specific organizational problems.

In one school in particular, K11, the specialists were much more successful than we had been in maintaining a smooth relationship with the staff. Perhaps not surprisingly, the Cadre (insiders) were viewed by their clients as more helpful than CASEA (outsiders). At the same time, of course, the Cadre members had to work very skillfully at that school to remove the taint of having been associated with us. By invitation, the Cadre returned to three of the schools later that fall, observed faculty meetings, reported on the state of group processes, or gave additional training in problem solving.

We have record of four Cadre interventions in elementary schools after 1970. A team of specialists conducted a two-day training laboratory for the successful open-concept school K12 to refurbish group processes in January of 1972. That outstanding school received more hours of training on more occasions than any other school in the district, and it consistently appears at the top or near the top on almost all our outcome measures (see the summary of its performance in Chapter 9). In a late interview, staff members gave a number of reasons for their success, but they cited the training as foremost. The specialists were again called in to assist in a crisis caused by a change in principals in school K07 in late August of 1972. During 1973-74, specialists conducted two survey-data feedback interventions for two previously untrained elementary schools, K01 and K04. In those schools, the specialists went beyond the intervention strategies and techniques they learned from us, learning new things from the literature and other practitioners and applying them appropriately.

The Cadre's work with secondary schools was much less extensive. In May 1970, two members of the junior high school we had trained (K23) asked a specialist to help them improve faculty meetings; they subsequently designed a short intervention that the specialist led. They later reported that the event had been successful, that communication skills were evidenced in faculty meetings, and that a group of teachers had recently developed a plan of action for some school problem and had received approval from the administration to carry it out. Knowing the difficulties of doing something like that in the school as we do, we regard the act as some evidence that the training helped the staff to tap its own personal pool of fresh ideas and resources, to treat dissatisfactions in a problem-

solving manner, and to turn hopes into concrete actions. A small team of specialists worked with the administrators of the older high school (K31) in the fall of 1972 to help establish the school's goals, philosophy, and objectives.

Work with Administrative Groups

Many administrative groups—including established departments and temporary meetings of administrators from different departments—called on the Cadre for help; specialists also gave consultation to the leadership of the KEA and to groups of teachers engaged in special tasks for the district.

As the budget crisis broke over the district in early 1970, the superintendent and his staff (the cabinet) agreed that communication at their meetings was poor. Participants were unsure of their roles, and norms did not permit healthy debate and disagreement. Few decisions were made publicly, and the cabinet was the object of confusion and mistrust throughout the district. The superintendent decided to open the meetings to broader participation, and several job groups were invited to send representatives to them; the superintendent instructed principals that any teachers who wished to attend a meeting should be released to do so. The Cadre was asked to send two observers to each meeting. The observers gave the cabinet feedback over the course of several meetings, and as a result, some important changes in group processes were made. The superintendent periodically stepped out of the role of presenter and convener to participate more freely in the discussion, while other cabinet members assumed leadership roles when appropriate. Agreements to help the meetings run more smoothly were made consensually. Time was allowed at the end of each meeting to debrief group processes and hear the specialists report their observations. As a result, there was much less criticism of the meetings by cabinet members, and the mistrust of the cabinet noticeably lessened throughout the district.

The superintendent requested a week's training for himself and his staff. That training, in July 1970, focused on skills of communication and decision making, team building, and systematic problem solving. The superintendent continued to call on the Cadre for observation and debriefing of school board meetings with the cabinet, and of a budget hearing for the entire staff of the district. In December of 1970, the specialists and the cabinet met to discuss ways the Cadre could help bolster the district's sagging morale; unfortunately, we do not know what specific actions resulted.

Over the years, in addition, specialists acted as process consultants or trainers for: members of the Curriculum Development Division, the annual summer planning retreat for the district's top administrators in 1972 and 1973, a task force of teachers who were revising the social studies curriculum in the 1972-73 year, and workshops related to the district's annual budget elections.

The specialists overcame the mistrust of the KEA toward them early

in 1971 when they conducted an intervention for the group's leadership. Though the association had supported the CASEA project and participated in training sessions, many members viewed the Cadre as an extension of the administration. Two specialists began observing meetings of the fifty-member representative council and debriefing them with the association's leaders. Cadre members then conducted helpful and confrontative problem-solving sessions that helped the building representatives and association leadership lessen their mistrust of each other, and the specialists continued to work with the asssociation for several months.

District-Wide Communications

Lack of district support caused the Cadre to cancel a major workshop for school and community, and the group slipped into inactivity when they discovered the new superintendent to be rather cool (although courteous) toward them in the fall of 1971. The superintendent we had known resigned at the end of the 1970-71 year for reasons of personal health and the budget crisis, but stayed on for a year as a deputy superintendent while the new man took over. The specialists felt that the new executive was waiting for them to prove their worth before he would support them. The test came in December 1971 when, on short notice, he asked them to design and conduct the first of the "Superintendent's Communication Seminars"—meetings open to all district employees and designed to smooth the flow of information between top administrators and building personnel. The specialists quickly marshalled their resources, successfully carried off the event, and received a warm "thank you" from the superintendent in the next morning's district bulletin.

On even shorter notice (in fact, overnight) the superintendent asked the Cadre to conduct a meeting for school employees and community members the following evening to share information on goals and the impending budget election. A crew met over a 6:30 a.m. breakfast to design the event, and smoothly carried it off that night in a remarkable display of ability to marshall resources, make plans, and turn them into action quickly.

The seminars, attended by 40 to 100 employees, continued more or less monthly throughout the rest of that school year and the next. Topics of the seminars included school-community communication and one-to-one communication with colleagues and students. The issue of trust within the district recurs often in reports of the seminars.

Early in 1974, the superintendent asked the specialists to survey district employees on the use of various existing communication channels and possible alternatives. The results were shared with a wide spectrum of job groups.

In-Service Training for Individuals

One of the most successful of the specialists's efforts on a continuing basis was the three-course sequence of in-service courses in communications and group process skills. Begun in September of 1969, the courses were offered nearly every year after that. They served to generate interest in the Cadre's activities, they gave individuals useful skills for working

with colleagues and students, and they became the main route to Cadre membership for interested district employees.

Other Activities

Cadre members carried on many other activities. They aided in one way or another two elementary schools in other districts, teachers' and principas' groups, PTAs, and League of Women Voters, social agencies, and so on. Lists and details appear in Document ED 111 107—Chapter 2 Appendix 4-A, and Chapter 12.

MAINTENANCE AND SELF-RENEWAL

A significant portion of the Cadre's energies was devoted to maintaining the Cadre as a group and increasing its members' skills. The Cadre showed remarkable ability to maintain its numbers as old members dropped out. The Cadre's numbers remained fairly steady, between 20 and 30, over the years. Problems such as membership criteria, recruiting, and determining acceptable levels of participation arose periodically, and the Cadre established a permanent task force to deal with those questions.

The specialists scheduled a variety of "self-renewal" sessions to learn new skills and intervention procedures, to attend to their own group processes, and to deal with specific problems. They held six major self-renewal events for themselves, and several shorter sessions in which to receive training in new skills. The Cadre maintained a number of links with outside agencies and persons and established a task force to search out new strategies and methods of operation. Every coordinator, too, continued to maintain the small professional library and made an effort to bring relevant research to the specialists' atttention.

With few exceptions, the relation between the Cadre and the district's leadership was moderately strong, though it was always a matter of uncertainty and worry. Though the specialists' job descriptions for themselves and the coordinator became part of the district's administrative manual in 1970, the school board never officially adopted a policy encouraging the work of the specialists.

Originally, the coordinator reported directly to the superintendent, and Cadre members felt the support of the superintendent during their first years. When the district got a new superintendent, the specialists became a part of the Student Personnel Services Division, and the coordinator reported to the division's director. Though the new superintendent expressed some support for the specialists, he never helped them strengthen their work, and the search for legitimacy within the district continued.

Budget

In the early years, the Cadre received a budget for its own operations of between six and eight thousand dollars per year.* After the advent of the new superintendent, the budget began dropping; in the school year 1974-75, the Cadre was given no budget at all.

*See Appendix A for some estimates of the cost of operating a cadre.

It might seem that removing the budgetary support for the Cadre would sound its death knell. But it did not do so. When the 1974-75 school year opened, the coordinator told us that morale in the Cadre had never been higher. The Cadre's services continued in demand. For example, school K01 requested training for team building and problem solving to be conducted in August of 1974. Even though there was no budget for the Cadre itself, the director of K01's area of the district found money to finance two days of training. The Cadre was requested to follow up with two training sessions at K01 in the late fall. The Cadre still considered the Keele district to be its chief "customer," although it had begun to be more open to invitations from other places.

Naturally, the loss of budget raised again the question of membership qualifications. One of the Cadre's first concerns in the fall of 1974-75 was to pare its membership to those persons willing to be fully active. The coordinator estimated that the number would settle down at about fifteen. A self-renewal session was scheduled for October. At the same time, the Cadre was considering levying a membership fee to cover minor administrative expenses. In addition to those indicators of continued strength was the fact that the coordinator continued at his post, at the request of the Cadre, even after he had resigned from the Keele district and had taken a position in the neighboring district of Abington. In brief, despite the discouragement of losing all financial support from its home district, the Cadre continued to make plans for the future, continued to do active work such as that at K01, and continued to maintain its cohesiveness, internal organization, and attention to self-renewal.

The Cadre did disband, at last, in 1975. If the Cadre was to serve the district, Cadre members and their clients both had to be released from their regular tasks for a suffcient period in which to carry out the consultation or training ; and at the last, the necessary time simply became to hard to get.

Some effects linger. Informal reports tell us that school K12 continues collaborative and self-renewing. One of the Cadre members became principal of a junior high school and has been using the Cadre's methods of marshalling the energies and resources of groups in her school. She has also served as consultant, over the years, to schools and social agencies outside the Keele district. Word has come that the superintendent has attended a workshop in communication skills. And we have heard that several ex-Cadre members are asking one another whether the time is ripe to revive the Cadre.

In the meantime, as we have said, several other cadres of organizational specialists have sprung up, most of them modelled on the Keele Cadre. The one in Eugene, now eight years old, and all the younger ones are continuing at this writing. The model, we think, remains sturdy.

THE CADRE AS AN AGENT OF ORGANIZATIONAL CHANGE

Many good ideas for managing education more effectively can be found in educational literature, educators' plans, and proposals by citizens. All

ideas face a common problem: how to move into a new way of doing things without slipping back into the old.

School people have mostly tried only a small variety of methods of changing organizational roles and norms.* For our purpose here, we can classify methods as follows: (1) *Mandate.* Every now and then, schools receive instructions to change something small or large from the federal government, state, school board, or their own administrators. (2) *Imitating a model.* People in a school may see or hear about something they admire elsewhere and strive to emulate it. (3) *Using occasional outside help.* When change seems especially difficult, organizations frequently call on an expert to provide guidance, technology, and impetus. (4) *Establishing full-time experts.* Organizations may establish a resident expert, or department of them, in the hope that services will be continuously available. (5) *Using an alternative mode.* An organization can learn to use the collaborative mode of operation as an alternative into which it can move temporarily when the usual mode is unsuitable. (6) *Establishing a special subsystem to facilitate organizational adaption when some portion of the organization wants to initiate change.* This is the method we are describing in this book. Our design for this subsystem differs from that of a department of full-time experts because its members do *not* work full time on the specialist team, because they do not press their services full time on the rest of the organization, and for other reasons we shall describe later on. This special subsystem also differs from many of the "innovative teams" that have been created to spur innovation in schools.

The first four methods of bringing about organizational change have proven weak in bringing about new norms of organizational functioning in schools; the reasons need not be rehearsed here. The fifth has been tried in business (see, for example, Zand, 1974) but not in schools. Our method, first put in motion by us in Keele in the spring of 1969, is that of a cadre of organizational specialists.

Our design for a cadre of organizational specialists rests on our belief that the capacity for being versatile in coping with problems and in making changes pivots on activity by schools and districts themselves—not on activity by an outside agency such as a state department of education or the federal government, and not on an outside interfacing system such as a university. Very early in our work we began to develop criteria for this capacity, which we call here *constructive adaptability.* We came to believe, along with Buckley (1967), that a school or district has greater constructive adaptability when:

> it seeks to improve functioning in its *subsystems*, not merely its individuals,
> it maintains ready access to fresh ideas and personal resources,
> it takes relevant and timely action in response to interior and exterior challenges, and
> it repeatedly assesses its direction and extent of movement.

*Chapter 12 of Document ED 111 107 compares the Cadre of Organizational Specialists as an agent of change with two other change strategies.

With that kind of constructive adaptability, a school or district can be much more effective in solving its own problems locally than most are at present. It is true that action from outside can force changes that are very visible—as visible, for example, as a fleet of school busses. It is doubtful, however, that requirements by federal government or court can enhance the problem solving capacity (skill) of the local district. Indeed, forced solutions from outside may more often than not actually weaken local capacity to solve problems (see p. 18 ff. of Runkel, Schmuck, Arends, and Francisco, 1979, for the argument). It is the function of a cadre of organizational specialists to help schools and groups in a district strengthen the features of constructive adaptability that we listed above.

How Does a Cadre Operate?

A cadre of organizational specialists deals with *process* rather than *content*. The cadre does not try to get school staffs and other groups to adopt specific curriculum changes, staffing patterns, or teaching techniques. Instead, the cadre helps these groups overcome interpersonal and organizational constraints that often frustrate good intentions and well-laid plans. The cadre helps groups marshal their own resources for making wise decisions about what to do and helps them create ways of working together to reach their goals. In short, the cadre's major task is to facilitate effective action. Details on the way a cadre operates and its relations with its clients can be found in Chapter 4 of Document ED 111 107 and Chapter 12 of the *Second Handbook*.

Assessing the Cadre's Activities

That the Cadre in Keele continued to survive and function for nearly six years—well beyond the usual lifetime of innovative groups in schools—seems to us perhaps the strongest single sign that our efforts paid off in the Keele district. Quantitative data reported in Part III of this book provide some evidence that trained schools more often exhibited the kinds of characteristics we call "constructive adaptability" than did untrained schools. Communications received from the specialists and others provide testimonials to the benefits perceived by the teachers in trained schools. Further, the specialists showed a remarkable ability to maintain and renew their group despite forces of the sort that have crushed innovative efforts elsewhere: the budget crisis, the change of superintendents, uncertainties over budgets and top administrative support for the Cadre, several changes in the Cadre's leadership and its relation to the district's power structure, and an approximately 50 percent turnover among Cadre members.

We have implied that if a cadre is to aid a district and its schools to be self-renewing—to have a lively capacity to solve its own problems locally—it must itself be self-renewing. We have said some things (and referred to more in Document ED 111 107 and the *Second Handbook*) about the Keele Cadre's meetings to refurbish its group processes and its activities to increase its skill by bringing in new ideas, persons, and printed materials. But were the self-renewal activities of the Cadre distinctive? Doesn't every

group in every school district have planning meetings, parties, and the like? Doesn't every district have a library for its professional staff? We think the sessions of the Keele Cadre differed from most group sessions in school districts in the following ways.

1. The Cadre initiated its own self-improvement. It is true that most school districts offer or require training sessions intended to improve the work. Sessions on Management by Objectives, new curricular methods, testing techniques, and other sorts of in-service training are common. In most instances, however, the training is put upon school people by those above them in the administrative hierarchy, and usually without attention to the immediate needs felt by the people required (or "urged") to attend. The Cadre determined its own needs, recruited its own outside consultants, and usually helped design its own training. That fact heightened commitment, readiness to learn, and the readiness of Cadre members to apply their learning. It seems significant that the Cadre members were treating themselves the way they treated their clients. They were practicing what they preached.

2. The new learning was directed to *group* functioning, not to individual functioning. The training sessions for the Cadre were always devoted to skills to be exercised in teams, not by individuals.

It is true that most school districts encourage staff to enroll for in-service training, to attend summer school at a university, to travel to foreign lands, and the like. Those sallies are almost invariably taken by individuals, however, and the rewards are reaped individually. In-service training and summer courses are almost never geared to improve the competence of a group. Instead, the participant often hopes, individually, to gain increase in salary (while others may not) or a better job elsewhere (leaving others behind).

When Cadre members learned new skills, they customarily practiced them together and carried them into the field in teams, not as individuals. When they contracted for new training or re-training, they did so to improve the efficacy of the *Cadre*, not to offer individuals a better chance to get a raise in salary or to get a better job elsewhere. Even when a Cadre member went off individually for training elsewhere or to consult outside the district, he or she always brought the experince back to the group and never held it private. In brief, the Cadre functioned as a collaborative, cohesive subsystem, not as a collection of individuals with individual duties. That fact heighened mutual support, both emotional and technical. It reduced harmful competition within the group. It increased the flexibility of the Cadre in assigning members to subteams. The very practice of this highly interdependent mode of functioning continually refreshed the Cadre's ability to draw easily and quickly upon its members' personal resources.

3. Training sessions were not lectures, but practice. Lecturing and reading were used to illuminate practice, but practical skill was always the thing emphasized. Any consultant from outside always had to answer the demand, "All right, that sounds good. Now can you show us how to *do* it?"

4. The Cadre dealt constantly with interpersonal relations among themselves. Their strong collaborative teamwork demanded high levels of trust and confidence in one another. If someone failed to do his or her part, others could not take refuge in the claim they had done *their* duty and leave the weaker member to be cast out by some superior. The weaker person became an operating problem for all of them. Sometimes, it is true, someone acquired skill too slowly and withdrew from the Cadre or was invited to withdraw. Most of the time, however, such a matter was openly discussed and treated as a problem of how to enable the person to be a stronger member of teams in the future. The solution of the problem always, of course, required airing feelings about how the stronger members acted in the team as well as how the weaker member acted. It required airing distrusts in both directions. Those sessions were not easy; they were fraught with emotion. But the Cadre faced them and dealt with them. They showed the capacity for communicating under emotion.

The next two chapters deal with theory and research method. After that, we turn to data on outcomes.

Part II

THE THEORY

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Theory and Technology

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An exact duplication of the "recipe" used in Keele would be inappropriate for districts with different problems. The meaning of organizational development beyond Keele will be clearer if we set forth the ideas that are key to our theory and technology. The theory and technology are also basic to undestanding the analyses of data that we shall present in Part III. This chapter, then, has two parts. In the first, we set forth some theoretical notions about self-renewal or (as we shall call it) constructive adaptability. In the second, we describe briefly the more important features of the consultations ("interventions") we and the Cadre carried on in Keele.

Why did we trouble with the hard work of organizational development? Why did we strive to teach a school new ways of doing things? There are two reasons. First, we value a humanistic orientation to life. That includes the belief that individuals ought to have the opportunity to act on their own initiative, use more of their capabilities, and enjoy collaborative achievement. We would like to see schools become more satisfying places (happier places, if you will) for students, teachers, parents, and the community at large.

Second, we believe that school organizations can learn to meet the challenges of changing times with more foresight, less ineffective wheel-spinning, and less trauma from being ambushed by the pains of change. We believe that organizational development can help schools adapt to change in a constructive way.

THEORY

Our theoretical scheme has developed from several sources: from reading about other theories and talking with colleagues, from trying out

intuitions and reflecting upon how they worked out, from studying patterns of data from our projects and others' projects, and by repeatedly trying to write down how all these ideas fit together.

Like any theory that is useful in understanding a changing reality, our theory constantly evolves. Although many elements were present when we began the project in 1967, the three-level theory we present here evolved during our experience in Keele. Because we feel that our new theoretical scheme is superior to the one we used in Keele, we shall use this new theory when assessing our accomplishments, even though the data do not always fit the three-level theory as well as we might hope.

We know it may seem unorthodox to explain results with theoretical positions developed after the data were in. Since we did not look at any patterns of data until 1972, however, our theory developed, not *from* our data, but during the intervening years while the data reposed unanalyzed in our files. We believe it would be almost unethical to ask our readers to go to the work of following our previous theory, a way of thinking we consider to be weaker than the one we can now offer them. We believe it more profitable to examine how the data from the Keele project confirm or disconfirm the later theory.

We present our theory very briefly. To follow out all the theoretical roots would require a large book itself. We pretend to present here neither a comprehensive theory of organizations nor a catalog of consultative techniques. We offer here a selection of statements, sometimes in the nature of postulates, sometimes more in the nature of points of view, to emphasize the features of organizational life to which, as organizational consultants, we give especially diligent attention. Taken together, we believe these features to distinguish our sort of organizational development from other kinds of organizational consultation.*

When a school or district can deliberately change in ways that improve its solutions to problems, we say that it exhibits *constructive adaptability*† More particularly, a school or district shows constructive adaptability when it (1) chooses problems to work on that will have large benefits for the organization in comparison to the energy necessary to invest and is able to invest the special energy necessary to bring the problem-solving effort to fruition, (2) maintains a lively access to fresh ideas and other resources, reaching both inside the organization and outside it to find them, (3) takes action when a feasible plan is reasonably well worked out; doesn't plan interminably, and (4) assesses its progress toward its goals systematically and periodically. Constructive adaptability requires conscious maintenance of appropriate norms and roles and conscious revision of them when necessary. Norms and roles are more easily maintained when they promote satisfaction of the motives of achievement, affiliation,

*For elaborations of the theory and references to our borrowings, see Runkel, Schmuck, Arends, and Francisco (1979) and the *Second Handbook*.

†By constructive adaptability, we mean the same thing that Gardner (1963) means by self-renewing ability, that Buckley (1967) means by morphogenesis, and that Williamson (1974) means by the inquiring school.

and power. They are more easily revised when the revisions promise better satisfaction of those motives. Roles can be kept clear and well articulated, and motives of individuals can be satisfied, to the extent that members and groups are skillful in organizational processes. We discuss below norms and roles, satisfactions, and skill.

Norms and Roles

One important way that organizational development produces constructive adaptability in schools is by making people aware of norms (how things are done) and roles* (who does what with whom) and by helping people make the changes in norms and roles they need and want to make.

When a person comes in contact with others while carrying out a task, it usually becomes necessary to work out some sort of coordination. The janitor may ask a couple of conversing people to move aside so that the hallway can be swept. People view that sort of request as permissible. If the janitor wants to sweep a classroom during class hours, the teacher (perhaps even some students) may feel thwarted in their own tasks, and may demand that the janitor come back another time. Sweeping the classroom floor during class hours becomes "not the way we do things around here." A *norm* grows up that specifies the times that certain parts of the building should be swept and by whom. The norm specifies actions that are *required* (such as getting the whole school swept daily), actions that are *permitted* (such as asking people to step aside when an area is being swept at an approved time) and actions that are *prohibited* (such as sweeping a classroom during class hours). A norm is strong when there is strong agreement in a group about the behavior that is required, permitted, and prohibited. It is strong, too, when group members frequently and clearly exhibit approval of required actions and disapproval of prohibited actions. Norms are the stuff of organizational climates. They can be powerful forces for resisting organizational change. On the other hand, the creation of norms that support interpersonal openness and tolerance can move the school a long way toward constructive adaptability.

Roles are specified by norms about the reciprocal, interdependent behavior appropriate between two persons or among the members of a group or organization. Certain kinds of business are considered appropriate between two teachers in a teaching team. Between a teacher and the principal, however, other kinds of business are deemed appropriate.

Just as it takes two to tango, it takes at least two to maintain a role. The true definition of a role is negotiated by continuing interaction and may, in fact, be very different from the role definition one finds in the administrative manual. That is, roles take their shape from the daily expectations people have of each other and the way those expectations are fulfilled.

New Satisfactions

The strength of norms depends in part upon the rewards or satisfactions they bring to those who follow them. In bureaucratic schools, most satis-

*The vew of roles in this section follows that of Newcomb, Turner, and Converse (1965, Chapter 11).

factions are negative and not energizing; they consist for the most part of avoiding unpleasantness. We believe that schools can alter their norms to offer their members the positive and energizing satisfactions that come with increased achievement, affiliation, and power.

By "achievement" we mean being successful in accomplishing tasks. "Affiliation" refers to feelings of belonging and affection, and "power" consists of having reasonable control over one's own work and having influence over the important decisions in one's own life. Those are McClelland's (1958) labels for the three kinds of satisfactions.*

We believe that as individuals experience those satisfactions, they find increased energy for work. We believe, too, that interpersonal norms that maximize those satisfactions will reduce in-fighting, backtracking, high personnel turnover, and outright sabotage.

Levels of Organizational Functioning

Schools and districts function because of interaction occurring on three different levels: the level of the individual, that of the work group, and that of the organization as a whole.

The first level of organizational life takes place face to face. This level of one-to-one communication occurs between individuals. Two teachers exchanging teaching ideas are engaging in first-level communication.

The second level of organizational functioning is that of group functioning, the level in which people come together to carry out certain tasks. Work in the group requires every member to deal with the dynamics of the group as a whole; no group could do its work if each member were to deal with the others one at a time.

The second level is the level of *subsystem*. A group within a system (school or district, for example) is called a subsystem when it has two characteristics: (1) its work is distinguishable from the work of other groups in the system and (2) its members communicate about their work more with one another than with persons outside the group. In short, a subsystem is a group whose members are more dependent upon one another than on outsiders to accomplish a particular task. A team of teachers is usually a subsystem of a school, and so is a self-contained classroom. A school is a subsystem of a district. The business department is a subsystem of the district's central office.

Because one cannot see structure in the same way one can see individual action, subsystems are not always readily visible. To what subsystem, with reasonably clear boundaries, does a mathematics supervisor belong? Or a bus driver? Or a peripatetic school nurse? Some of those people may, in fact, have very weak membership in any subsystem; they may participate in subsystem functioning only sporadically and tangentially.

Of course, no individual functions as a member of only one subsystem. It is helpful to think of a subsystem in an organization as an interaction of a cluster of humans for the purpose of carrrying out some *function*. A

*Other investigators who have suggested similar conceptions of satisfactions include Foa (1961), Longabaugh (1966), and Alderfer (1969).

teacher works in a team of teachers to organize learning opportunities for students. The teacher works with a different cluster of persons when carrying a requisition for materials to a secretary who forwards it to a procurement officer. The teacher contributes to the function of organizational decision making when giving advice on school problems at a staff meeting. In brief, the teacher moves from one subsystem to another to contribute energy and information.

The third level of organizational functioning is the level of the organization as a whole. It is the level on which subsystems communicate and function together as a whole system. When some or all the diverse groups in a school coordinate their efforts to work on a certain problem, they are functioning on the third level. On this level too, the whole organization communicates with its environment.

First-Level Skills and Norms

In our view, organizational development begins by improving members' skills on the first or interpersonal level. We usually begin (though not always) by teaching these skills:*

1. *Skills of communication* in face-to-face situations. These include the readiness and ability to communicate when feeling strong emotion. Also included are the abilities to give and receive feedback concerning meanings sent or received and the skill of drawing out perceptions of common reality in a group.
2. *Skill in converting frustrations into problems* that can be stated in terms of the present situation, the preferred situation, and alternative plans for moving from the present state to the preferred.
3. *Skill in openness*—eliciting or giving relevant information during discussions.
4. *Skill in responsiveness*—stating clearly what one will (or will not) do as a result of discussion, and then doing it. This can also be stated as readiness to take action in response to a perceived need.
5. *Skill in bringing into view personal abilities and resources.* This skill includes the ability to reveal such diverse things as skills, ideas, desires, useful acquaintances, personal libraries, or other resources that might not be known from the routine performance of persons in their jobs. This skill is sometimes called "variety" after Walter Buckley's (1967) "variety pool," a term he used to mean an organization's potential for producing non-routine ideas and action. This also overlaps with "skills of communication," above, because emotion or fear during communication often prevents resources from becoming known.

As participants practice these first-level skills and begin spontaneously to use them in their work, new norms begin to develop—though, as we shall see in Part III, they occur to a greater degree in some schools than in others. Below are some examples of changes in norms that can occur. Although some of these norms are not directly linked to the first-level skills,

*See Chapters 3 and 7 of the *Second Handbook* for methods of teaching these skills.

they are norms that we have found to emerge when first-level skills are mastered.

*Norms commonly found**	*New norms*
Persons continually try to make their position known and to persuade others of its merits—talking past each other and unwilling to hear what others say.	Persons continually check to make sure they understand what others are saying—speaking to relevant issues.
Unpleasant feelings remain hidden.	Persons feel free to report directly to others if something in the interpersonal communication process is bothering them.
Feelings of others are ignored—there is little checking to find out what they are.	Persons show concern for the feelings of others—for instance, by monitoring non-verbal cues and checking the accuracy of impressions.
Members are afraid to express ideas, goals, and proposals because they will be sharply criticized before consideration.	Members are eager to share goals, ideas and proposals—knowing the contributions will be evaluated critically but respectfully.
Group fails to discover special resources of members.	Members with special resources are identified and listened to carefully.

Although we have just discussed ways to improve skills at the first level of organizational functioning, we do not want to leave the impression that the first step in organizational development is changing individuals. It is true that individuals develop greater skill in communicating, perceiving frustrations as problems and so on. But those skills cannot be exercised by a solitary individual. It takes two or more to communicate, it takes two or more to agree on how a problem facing the group or organization can most fruitfully be stated, and so on. The first-level skills are joint and reciprocal. They are like swinging your partner at a square dance. The skill of one of the partners cannot make up very much for the lack of skill of the other. If each one does not properly counterbalance the other, both stagger. Improving a skill at the first level is improving a skill that lies *between* people, not a skill that lies within any one.

As practitioners of organizational development, we design training for groups, not individuals. The skills become *joint* skills. As interveners, we teach work groups to improve their modes of interpersonal behavior, and we feel that an entire group of workers must be trained together for training to improve organizational effectiveness and health. The point will be discussed more fully in the sectio non Technology below.

Second-Level Skills and Norms

We turn now to skills and norms that serve to advance the functioning of the subsystem, whether that be a teaching team, a school, a budget com-

*We have borrowed these contrasting statements from the introductory booklet by Arends, Phelps, and Schmuck (1973).

mittee, or the production staff of a school play. The emphasis in these second-level skills is on collaboration. The skills that we try to teach for enabling subsystems to function effectively are shown below.

1. *Clarifying communication within the subsystem.* Members of a group learn, at the second level, to clarify communication in the group so that all members share a common understanding. The common understanding cannot be reached through a sequence of pairs. The skill is different.

   Ambiguity and conflict about norms and roles can be alleviated by developing more precision in the transmission and reception of information in the group. Group skill in communication can develop internal and external channels that bring in more accurate information about the environment.
2. *Agreeing upon goals* within the subsystem and *revising* them when they no longer serve. An effective working group does not regard goals as immutable, nor challenges to them as disloyal. It regards goals as descriptions—always somewhat tentative—of the common directions of the striving of the group. Subsystem members can learn to clarify and share their objectives, to increase their sense of "owning" the goals, and to integrate their efforts.
3. *Uncovering conflicts* and, where possible, instituting norms for collaboration within the subsystem. Confronting conflicts, coping with them effectively, and exploring interdependencies will help to establish norms and roles that will increase an organization's effectiveness. Norms for collaboration can replace norms for the mere avoidance of conflict, and interpendence can replace mere submission.
4. *Improving procedures in meetings of the group.* This means using procedures that encourage the use of first-level skills and enable the other second-level skills to be exercised effectively.
5. *Group problem solving.* By this we mean using systematic, conscious problem-solving procedures. These include (1) agreeing about the present situation, (2) agreeing upon the ideal or goal, (3) generating acceptable methods of moving from the present state to the goal, (4) assigning persons and dates to the steps required, and (5) monitoring progress. Our current practice uses Fosmire's S-T-P organization of group problem-solving (unpublished). This procedure shifts back and forth among the phases of describing the present situation (S), stating the target or goal (T), and considering plans or paths for getting from the one to the other (P). This procedure shares many concepts with the D-A-P procedure presented by Nagle and Balderson (1974).
6. *Making decisions* by appropriate means. Although we usually find that groups need more training in decision making by consensus than by other methods, no one method of decision making is best for all kinds of decisions. Decision making by one person, a subgroup, a majority, a consensus, and a unanimity all have their places.
7. *Assessing progress.* If all these skills are to be productive, the group needs to be able to pause in its work periodically to ask,

"Where are we now?" This skill is necessary in all of the six kinds of operations listed just above.

As participants practice the second-level skills in their work, new norms emerge. Below are some examples of changes in norms that can occur.* Although some of these norms are not directly linked to the second-level skills, they are norms that we have found often emerge when second-level skills are mastered.

Norms commonly found	*New norms*
Groups pay little or no explicit attention to whether their communicative customs are helping their work.	Group pauses periodically to check whether first-level communicative skills are being helpfully used.
Goals are taken for granted without much discussion, are accepted from superiors without checking commitment at the working level, or are challenged without resolution.	Goals are carefully discussed at the working level and degrees of commitment ascertained. They are reviewed periodically and revised as necessary so that announced goals do not get out of kilter with working goals.
Members interrupt each other, talk at the same time, use sarcasm, and ridicule or "put-down" others to express disapproval.	Communication is open and direct, with favorable and unfavorable feelings being described explicitly.
Conflicts are hidden and dealt with (if at all) only behind the scenes or in explosive, destructive, unresolved confrontations.	Confllicts are considered openly as part of the description of the present situation and as signals that it is time to ask whether an episode of problem solving would be profitable.
Problems are taken to be a sign of illness; life would be better if there were no problems.	Problems are viewed as normal; solving problems is welcomed as a chance to unleash creativity for improvement.
Group agreements about meeting procedures exist only implicitly, are often misunderstood, and are considered openly only rarely, if at all.	Group agreements about meeting procedures are made explicit in advance and checked periodically.
Methods and procedural rules are inflexible or generally consist of strict adherence to Robert's Rules of Order.	Methods and procedural rules are flexible and can be readily adapted for different needs.

Third-Level Skills and Norms

Constructive adaptability, the final result of organizational development, is made up of four third-level skills. These are the marks, so to speak, by which the constructively adaptive school or district can be recognized. The

*We have borrowed some of these contrasting statements from Arends, Phelps, and Schmuck (1973) and others from Postman and Weingartner (1973).

following skills at the overall organizational level (and in the organization's interaction with its environment) constitute constructive adaptability.

1. *Instituting problem-solving episodes* when progress toward a goal is too slow or when norms that serve constructive adaptability weaken. This ability rests, in turn, upon many other abilities. The organization must be able to maintain sources of accurate and relevant information and maintain communication channels to convey this information accurately and swiftly to those concerned. Members must be ready to volunteer relevant information to each other, and there must be norms for group work that support effective reconsideration of goals. The organization must have the ability to uncover conflicts, and it must have the ability to carry through a problem-solving sequence effectively once the need is agreed upon. Finally, the ability to institute problem-solving episodes depends upon all the other first-level and second-level skills we have discussed. Being able to institue problem-solving at the appropriate time demands not only skill at problem solving proper, but also the ability to set aside the necessary time, marshal the appropriate people, and so on. Furthermore, the norms of the organization must have been modified to reward the use of problem-solving skills.
2. *Maintaining access to fresh ideas and other personal resources.* Under routine operations, many ideas and abilities are likely to remain undisplayed because they are not immediately necessary in daily work. To maintain constructive adaptability, the organization must create occasions upon which potentially useful ideas, abilities, and talents can be exposed to view. Some of this kind of thing, it is true, can be done simply by keeping a file of personal resources. Usually, however, periodic occasions for soliciting new ideas, either in discussion or in writing, are necessary. Such occasions are parts of standard sequences for group problem solving, but the constructively adaptive organization must provide occasions not centered around specific problems, so that the potentialities of the organization can become a lively part of the imaginations of the members. This skill is like the first-level skill of bringing into view personal abilities and resources, but as a third-level skill it is not merely an individual skill but a skill of the whole organization. Like the first-level skill, it can also be called "variety."
3. *Taking action.* This organizational ability corresponds to responsiveness at the first level. At the third or organizational level, it means making time available for working on change for extended periods, providing necessary financial support, coordinating the change effort helpfully with connected groups, and so on. Many organizations suffer from chronic inaction. The constructively adaptive school or district can *move*.
4. *Assessing movement.* This organizational ability corresponds to assessing progress at the second level. At the organizational level, it means using methods to chart long-term trends, assessing the different sorts of effects on different subsystems, calculating

costs—both financial and emotional— estimating impact on other schools or upon relations with the community, and making decisions whether to continue, stabilize, or revise.

Our kind of organizational development does not offer a specific formula or packaged sequence for helping a school or district move from subsystem skills to overall constructive adaptability. It is our belief that the appropriate rearrangements of subsystem functions and interrelations among them must be worked out—tailored—to suit the local situation with which the school or district is trying to cope. We do believe, however, that there is one kind of subsystem—the cadre of organizational specialists—that can help any school or district perform the sensitive work of moving from the skills of the second level to the third.

Finding indicators of progress toward the third level depends heavily on what is happening locally. We cannot offer a list of specific practices or activities that should be found in every constructively adaptive school or district. The concept itself implies adapting practices and activities to special local conditions and times. The Keele district showed its adaptability when the superintendent's cabinet, in one year, designed a new kind of meeting to facilitate its communication with staff in the district. In Eugene, Oregon, an elementary school adapted to the lack of a kindergarten by reorganizing radically the first two weeks of the first grade. Those examples might be inappropriate in other places and times.

TECHNOLOGY

To achieve the capacity for constructive adaptability, most schools need training and consultation. To understand the steps a school must take to become constructively adaptive requires an understanding of certain principles used in designing training and consultation activities.

Made, Not Born

Our training is based on our belief that no matter what personalities group members have, they all can learn new interpersonal skills in periods of time that are economically feasible. Exceptions are very rare. Skillful group members are not usually born that way ; they can be made so. It does not say that personality characteristics have no effects on the performance of an organizational member, but it does say that interveners in organizations are not limited by the kind of personalities they can find to stock the membership.

Subsystems, Not Individuals

Skills in working as an organizational member are interactive skills, not individual skills. Consequently, the expectations of each member of a subsystem must be answered by the actions of the others. If four persons of a six-person team learn to work together, they will have to recycle their learning when the other two join them. If only one person is trained, that person faces the task of trying to influence the others to undertake new interactive patterns not yet experienced and tested by the whole team. The

efficient thing to do, obviously, is to train the subsystem as an interacting whole.

Training only part of a subsystem is like training only part of a football team or part of an orchestra. The team or orchestra can perform, after a fashion, but never as well as it can after the whole team or orchestra has practiced as a unit. Even if all individuals have had training separately, the necessary interactive patterns in a new group must be learned in that group. An all-star football team never goes into a game without having practiced together, despite the superb skills the individual players have shown with other teams.

A subsystem has characteristics of its own that are not merely the assembly of the skills of individual members. Consequently, we assemble a subsystem and train *it*; we do not train individuals and then assemble them. We began training in Keele with the superintendent's cabinet as a unit. We always sought, too, to train entire school staffs, in preference to a part. By the time we began training the Cadre of Organizational Specialists in 1969, the subsystem concept was taking more complete form in our minds; the design of the Cadre (see Part I) shows strong use of the concept. Since then, we have seen repeated demonstrations in later projects (and in the work of others) of the power of this concept.

Training subsystems has other advantages at the individual or motivational level. Trying out new interpersonal norms requires risks. The person being trained away from the regular work group has no way of estimating confidently the risks to be encountered when he or she tries out the new ways of acting in the work group back on the job. If only part of a work group undergoes training, it will have the same uncertainties about how the untrained members will react (for example, see Starling, 1973, summarized in Schmuck, Murray, Schwartz, Smith and M. Runkel, 1975). When all members of a subsystem are trained together and in interaction, however, they can all see how others are reacting at each small step. Not only does this procedures reduce risk and heighten trust, but it brings quick reward in the form of the satisfactions of affiliation and esprit de corps.

Sometimes the intervener's design for organizational development will include working with existing subsystems. At other times, when certain functions are being neglected that could improve the effectiveness of education or the satisfactions gained by the school's members, the intervener or the client may decide to construct a new subsystem. Constructing a new subsystem requires re-allocating time-energy-money budgets to support a re-allocation of functions. It also requires building the opportunities for satisfactions into the new structure that will give it cohesiveness. Finally, it requires instituting "interfaces" with the other subsystems with which it will be interdependent; that is, the necessary new links to carry coordination and information must be set in motion and regularized. This book tells in some detail the story of building one such new subsystem—the Cadre of Organizational Specialists in Keele.

We do sometimes make one exception to the subsystem rule. Principals

and superintendents can exert high control over those they supervise; the alacrity, openness, and responsiveness they exhibit during training is taken by many as a signal of the support they are giving to the project and of the degree they will approve of others' participation. Also, when a group containing a principal or superintendent is working at the second level, trying to improve coordination, and the administrator shows low skill, other members are often reluctant to point to that lack of skill or try to help the administrator improve it. That state of affairs can discourage the group and hold back progress. For those reasons, we sometimes take a principal or superintendent aside for special coaching. When we do that, however, we limit the coaching of the administrator to the needs of the group he or she is working with at that time. For further comments, see Schmuck (1972) and Schmuck and Nelson (1970).

Four Phases of an Intervention

Because no two client groups are exactly alike, no two interventions are identical. The selection and pacing of specific activities depend on what has already occurred and what needs to happen next; continual assessment and planning enable the interveners to design each intervention to fit the needs of each individual group.

There are, nevertheless, four fairly distinct phases* through which interventions cycle. In a rough way, most of our interventions progress from one phase to the next, although the issues involved in each phase recur in new forms in later phases. In the first phase, the emphasis is on increasing interpersonal openness and trust. Clients learn communicative skills such as paraphrasing, describing behavior, describing their own feelings, checking their perceptions of the feelings of others, and giving and receiving feedback. In the second phase, the emphasis is on increasing the awareness of interdependence among group members. By exploring and identifying common goals and the group processes that enhance movement toward those goals, group members discover how to build a smoothly functioning, task-achieving team. In the third stage, group members clarify and establish their common expectations. They build norms that encourage the management of conflict, systematic problem solving, and participatory decision making. In the fourth stage, the roles, procedures, and structures to be used by the group are designed and clarified.

Ordering of Skills

We believe that for several reasons the first-level skills are primary and serve as a basis for the second-level skills. We believe that training goes more smoothly when it begins by improving first-level skills, and that it is virtually impossible for a group to have good second-level skills without having good first-level skills too. In the same way, the third-level skills depend on those of the second level.

*The phases given here are roughly similar to the four phases of group development given by Tuckman (1965). The first phase concentrates on first-level skills.

We design our training so that it asks only small risks of participants at each step and gives them quick experience of new satisfactions. This is one reason we begin by teaching first-level skills.

Often, within the first half-day of training, we give brief instruction (less than ten minutes) in each of the first-level skills. We then ask participants to practice the skills in simulated, artificial, game-like tasks wher all conversation is about the game itself. High-risk discussion of the real work-a-day situation is thus postponed until later.*

The first-level skills of communication are the most basic. As participants practice the new modes of communication in pairs and groups, they find some immediate satisfactions that are usually rare during their ordinary work. When others paraphrase their statements, they begin feeling that others care about understanding what they are saying. Their feelings of competence and influence rise. When others check to be sure they understand the feelings a person is having—feelings about taking risks in a certain direction, for example—the person begins to feel that his or her human qualities are important to others; she or he begins to feel valued by others and connected to them. Affection springs up.

The other first-level skills provide similar satisfactions. When others seek information from a group member, when they seek talents that can be put to use, when they listen to new ideas without immediately finding fault, when they accept expression of a frustration as a symptom of a group problem rather than as a nuisance from a complainer—in all those experiences, people (both givers and receivers) feel enhanced competence, influence, and belongingness. The experiences are highly rewarding; participants enjoy the satisfactions of achievement, affiliation, and power†

Rewarding experiences during first-level training episodes serve four additional purposes: (1) they give participants a surer picture of the goals of the training and of what the training will be like, (2) they provide participants with some basic concepts that will make it easier for us to present more complex concepts later, (3) they increase participants' estimate of the likelihood that goals can be achieved, and (4) they inrease the attraction of the participants toward the training. Those changes in perception and attitude on the part of most participants lead them to be willing to expend energy on next steps in training and to take the greater risks that the next steps require.

When a group attempts the second-level skills, individuals are taking greater risks than when they practice the "smaller" skills of the first level. In exercising second-level skills, individuals must be willing both to commit larger blocks of time and to be bound to more fateful decisions. The

*Details of training designs are given on pages 40-43 of the booklet by Arends, Phelps, and Schmuck (1973), and in various parts of the *Second Handbook*, especially Chapters 9 and 10.

†Though those principles are sound, special adaptations must sometimes be made to groups with very low verbal skills, those who have long suffered oppression, and those containing persons long accustomed to exceptionally high status or power. In Keele, however, we encountered no extremes.

organization, too, is usually more strongly affected by second-level activities than by first-level activities. It is in this sense that we order the levels of skill and norm.

At the second level, individuals encounter new forms of opportunities for satisfaction. As subsystems function more effectively, the satisfactions of connectedness, interpersonal warmth, and esprit de corps can come to permeate all activities, even while the satisfactions of vigorous action, influence upon one's organizational fate, and achievement of worthwhile work-goals are also being experienced. Through those satisfactions, especially that of affiliation, the ties that will keep the group together become strong enough to persist through later vicissitudes and tribulations.

It is at the second level that the group-in-training begins to work on its actual work-a-day problems. At the third level, it will work on the environmental problems within which work-a-day problems are embedded. The environmental problems are those located in the overall structure of the organization and in its interfacing with its community.

Obviously, when a school or district undertakes major changes in procedure or structure—such as instituting team teaching or the "open concept" school—still greater risks are in the offing than when it is making the smaller changes at the first and second levels. Organizational changes, we believe, should be built upon a strong foundation of skills of the first and second sorts. We shall give some evidence for that recommendation in later chapters.

Process and Task

Because our culture largely directs attention away from interpersonal processes—how we deal with one another—it is difficult for most people to understand, at the beginning of training, the difference between communicating about some task and communicating about *communicating*, the difference between working on a task and working on *how* to work on a task, and so on. It takes a while for most people to distinguish, in thought and action, between *task* and *process*. In our training and consultation, we do a lot of talking to help people conceptualize *process* in group and organization.

One way to signal the distinction to trainees before actually talking about it is to emphasize the role of process facilitator during training. Another way is to establish process facilitators in the district, so that when a person acting in that role is present, people understand, at least, that they are now going to pay attention to something beyond the task itself. We did that when we established the Cadre of Organizational Specialists.

Act, Then Think

Ordinary schooling requires the learner to conceptualize something and then do it. A college professor's approach to teaching students to ride a bicycle might be to give a series of lectures on how to ride a bicycle and then to tell the students to go do it. Children actually learn to ride bicycles, however, by doing it and then talking (thinking) about it. It is true that

they fall off a few times while learning, but the professor's lectures would not save them from that.

The tradition of organizational development, along with that of other varieties of training in interpersonal process, makes maximum use of experiential learning; that is, first experiencing a new way of acting, and afterward talking and reading about it. We follow that tradition. With that method, people can acquire concepts (and skills too) in much less time than a lecture course in college would require and with much greater effect on the job. Some indirect evidence comes from our success in teaching cadres of organizational specialists, in 200 to 250 hours, to do effective organizational work that most persons with doctoral degrees in group dynamics, organizational theory, or the like cannot do—though we grant that the holders of the doctorates can talk longer and more reconditely than can members of our cadres.

Giving trainees experience before concepts enables them better to estimate the kinds of risks they are undertaking and therefore the amount of use they wish to make of the concepts when they are presented. Concepts are only talk, not guides to action, until people believe they will be doing something (or have done something) to which the concept applies.

Then too, participating in the new interpersonal relations brings the increased satisfactions we have mentioned before, and the trainees immediately want to talk about those happy changes—or about the stress of making them, as the case may be. They are then usually eager to learn adequate concepts to use in their talking, thinking, goal setting, and planning.

Outsiders

When an insider (especially the boss) tries to move people into far-reaching organizational change, that person's altruism is always suspect. For many people, especially those who believe that an organizational member can better her or his own working conditions only at the expense of others', the mere fact that an insider wants to change things is enough evidence that the change will do them harm.

In addition, no matter how well-meaning the insider may be, there will be occasions during the change when his or her own welfare in the organization becomes threatened; at those points, the likelihood is too high that the insider will take an action unhelpful to others.

An outsider (a consultant-trainer) can by-pass those difficulties to a considerable extent. Beyond her or his personal and professional stake in carrying off a successful project, the outsider usually has much less investment in the client organization than the insiders. That fact helps most participants to go along with the consultant's requests.

Insiders have advantages of their own, it is true. They "know the ropes." They know many important facts outsiders have to learn before they can become fully effective. (It is also true, however, that insiders are often wrong about their "facts.") Insiders, too, are already functioning parts of communication channels into which the outsiders must require some time

to insert themselves. The trick for interveners is to combine the advantages, during the change and during the stabilization of new norms, of the insider and the outsider. The Cadre of Organizational Specialists in Keele was able to combine the advantages both of the insider and the outsider.

Changing Norms

Making old and new norms explicit when attempting to change norms will maximize an organization's chances of success in discarding old norms and adopting new ones. Important skills required of the intervener are those of (1) ascertaining the norms now operating in the school or district, (2) making them visible to members (since organizational members are often unaware of many of their norms), (3) helping members to generate ideas for new norms that will give support to the change being undertaken, and (4) helping them to anticipate the problems they will encounter in trying to establish the new norms.*

We have observed that an organization changing from old to new norms will go through a period of confusion. Productivity goes down. The "feel of things," too, is that of congestion, conflict, and general things-going-awry. During this period of transition, assessments of conditions often tell a story of lowered effectiveness and lowered perception of competence. Only after the client becomes skillful with the new norms does productivity rise and the feel of things become that of clarity, freedom, competence, and satisfaction. We shall see evidence on that point in Part III.†

*For ways of bringing norms into the awareness of participants, see pages 206-208, 372-374, and 428-433 of the *Second Handbook*.

†An specially dramatic example is given in Chapter 4 of Schmuck, Murray, Schwartz, Smith, and M. Runkel (1975).

Chapter 4

Collecting Research Data

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From the beginning of the Keele project, the CASEA team wanted to document the lessons learned. We hoped the project would help to improve the state of the art of organizational development in school systems. To that end, we would need to collect and analyze data.

We used four methods to gather data. The major research method was a series of questionnaires. First, we collected data from four waves of questionnaires administred to about 1,250 professional staff members in three districts from 1968 to 1972. Second, we conducted extensive interviews, mainly to gather diagnostic data prior to designing training events. Third, we used a large collection of documents recording activities of the Keele Cadre and the conditions in the district. Those documents included newspaper clippings, minutes of Cadre meetings, reports of Cadre activities, and letters. Fourth, one substudy used tape recordings of classroom proceedings (for the last, see Bigelow, 1971).

QUESTIONNAIRE ADMINISTRATION

Four forms of the questionnaire were constructed: one for the administrators in the central office, one for building administrators, one for teachers-and-others (including such employees as aides and librarians), and one for service personnel (secretaries, custodial staff, cooks). Persons employed less than half-time were omitted. The questionnaires were administred four times: in January 1968, May 1969, April 1970, and April 1972. The first administration came before any intervention in the district and was intended to provide a base of information, or pretest.

Part of our agreement with the Keele superintendent and his staff was

that they would support our requests to school people to fill out periodic questionnaires. In early 1968, the top administrators in the neighboring districts of Abington and Findlay also agreed to allow us to give questionnaires to their school and central office staffs. Despite their cooperation, we were to encounter a variety of difficulties at all steps in the data collection, from misplaced questionnaires to bomb threats.

When we originally designed the data collection, we were worried about the fact that participants might be reluctant to put trust in us as trainers and consultants if they also perceived us to be data-collectors who would be evaluating their performance. We were afraid that anxiety about being evaluated might make at least some participants reluctant to tell us their worries and problems, thus removing the problems from the reach of our consultation. Our original strategy was to try to associate ourselves (CASEA) in the minds of the participants with training and consultation, and to associate someone else in their minds with questionnaire administration. We asked friends at the Northwest Regional Educational Laboratory (NWREL) to visit the districts with us to arrange the data-collection. We printed the NWREL name on the questionnaires as our partners in the venture. We supplied individuals and schools with return mailing envelopes bearing NWREL's address. Our friends obligated us in all that. We soon learned, however, that our ruse was ineffective; most participants identified the CASEA consultants as the instigators of every part of the project. In later years, we doffed the disguise.

In January of 1968, we trained a number of local PTA officers to administer the questionnaires. The process went fairly smoothly in elementary schools, but in Keele secondary schools we hit a snag characteristic of some aspects of the district's operations.

The district's administrators apparently forgot to inform the principals of secondary schools about the data collection, and we did not discover the error until the morning of the scheduled day. After some scrambling by us and grumbling by the principals, the event was rescheduled and the forms completed. Most teachers had not expected the questionnaires, and their comments on the forms at times vividly expressed their displeasure.

Shortly afterword, an officer of the KEA reported a number of complaints about the forms, especially about our request that the respondent and colleagues be identified by name (necessary because we were attempting to identify cohesive subgroups within the schools). Some respondents complained even though we made it clear that it wasn't necessary for them to sign their names if they chose not to do so. Respondents also objected to items on family background of the sort standard in sociological research. We believe that the comments reflected more than the usual resentment toward university-based researchers. The pervasive concern with confidentiality and disclosure mirrored the extensive mistrust within the district and what the KEA's newsletter termed "institutional paranoia." Further, the inadequate preparation brought comments on the worth of our research and our efforts. While some teachers welcomed us ("We need help," and "How about spending some time in our building?"), others

resented us ("Go away!" and "Drop dead!"), and one told us, "Your gummed label tastes terrible!"

School staff members completed the questionnaires while our PTA representatives waited, and central office administrators filled them out during two meetings at the district's headquarters. With more than 80 questions—some of them with several parts—answering the questionnaire took some people as long as two hours. In 1968 in Keele, we obtained returns from 384 of the 457 staff members (84%), in Abington 204 of 276 (74%), and in Finday 284 of 368 (77%). The returns included all schools in Keele, all secondary schools in Abington and Finday, seven of Abington's nine elementary schools, and nine of Finday's thirteen elementary schools. Our overall return rate was 79 percent.

We encountered new problems the next year, in May of 1969, when we entrusted the data-collection to a private research firm. Our plan was to assemble the staff of each school, distribute the questionnaires to them, and ask them to complete the forms at their leisure and return them to NWREL by mail. Using the private research firm was a mistake. In at least one school, the person hired to distribute questionnaires took the occasion to disparage our research and present her own views on sex education. One teacher in the school wrote:

> She antagonized the faculty by giving her views on sex education in the _____ School District, which her children attend. It has been speculated that she was passing out the survey in order to satisfy some means of her own—getting into the various schools.

One can only despair of the quality of data that came from that school in that year. Still, we included the data in the analysis and, as we shall see in later chapters, the data as a body showed consistent patterns of outcome that gave us a good deal of confidence in their validity.

While the 50-item form in 1969 was considerably shorted than the previous year's, filling it out was still an onerous task for many, who expressed their resentment in their comments. The general run of unfavorable comments, however, was not nearly as vitriolic as those in 1968, and a much larger number of respondents volunteered information about the school district. Again, some people expressed concern about confidentiality and told us they were not prepared for the questionnaire and did not know its purpose. Reactions in trained schools were mixed, though unfavorable comments slightly outweighed the favorable. Several people saw little value in the training in return for the time spent, while others reported disappointment that the training had not been more extensive. Only a scattered few had praise for our efforts.

Our data collection in 1969 again covered all schools in Keele and secondary schools in the other two districts; we also obtained returns from all elecentary schools in Abington and eight of Findlay's seventeen elementary schools. Our problems were undoubtedly compounded by our failure to feed back any of the 1968 questionnaire information we had promised to the districts. We received a number of reports from Findlay about their unhappiness. Asking the districts to permit us to administer the question-

naires (in mid-May, always a hectic time in schools) after a year's silence undoubtedly lowered our rate of return. Many teachers simply discarded the form rather than take time to fill it out, and our overall rate of return in 1969 was only 57 percent. We received a 59 percent return from Keele, 68 percent from Abington, and only 43 percent from Findlay.

We very nearly missed Findlay altogether; when we organized 1969's questionnaires in our files after NWREL had forwarded them to us, we were appalled to discover that we had only *four* from Findlay! We were completely unable to discover the cause. Finally, months later, the mystery was solved by the sheer good luck that someone on NWREL's staff stumbled across a dusty box in a back room, full of our questionnaires from Findlay. NWREL was moving its offices, and our questionnaires had been lost in the shuffle.

We achieved higher rates of response in the two final years of data collection. We think there were three reasons. First, we gave better notice beforehand. Second, in January of 1970, we sent some partial tabulations of data we had so far collected. Third, participants had not experienced any hurtful consequences from filling out our questionnaires; we think they were learning that we would, indeeed, maintain the confidentiality of their responses.

We administered the 1970 questionnaires in April; this time our crew and some of the Keele Cadre distributed the forms to staff members and waited on the spot while the forms were filled out. The administration proceeded fairly smoothly, and with one exception our records do not indicate any major difficulties. We again covered all schools in Keele, all secondary schools in the other districts, eight of Abington's ten elementary schools, and eight of Findlay's seventeen elementary schools. We received a 75 percent return from Keele, 65 percent from Abington, and 56 percent from Findlay.

The next year—spring of 1971—we surveyed feelings in the districts by telephone, and concluded that we would be trying their patience too far by asking for another round of questionnaires that spring. The decision was painful to us as researchers, but it seemed prudent.

The following year, the February of 1972, we sent all schools in the three districts a series of five short interim reports. Those reports described the work of the Cadre of Organizational Specialists in Keele. They also compared the norms about interpersonal communication between trained and untrained schools, the attraction teachers felt toward their school and their profession, and the ability of staff to use their own resources. After doing that, we felt a little more justified in asking for another round of questionnaire-answering that April.

Our scanty feedback of information to the districts was one of the major weaknesses of the project. There were many reasons for our failure in this respect, including such things as underestimating the sheer bulk of work in processing so many questionnaires and troubles with programming the computer. Whatever the reasons, we did a poor job of feedback, and we are not proud of it.

By April of 1972, as one of our crew put it, "We had them pretty well trained," and the questionnaire administration proceeded well. Once again, however, the district's administration complicated matters when the deputy superintendent neglected to secure released time for the Keele specialists who were to assist our crew. We hastily rounded up volunteers, drafted some members of the Eugene cadre, and managed to complete the administration. One of our assistants had a hair-curling experience. About half way through the questionnaire administration, the principal walked out of the room to talk with two somber-looking visitors. When he returned, he calmly announced, "When you've completed your questionnaires, would you please look for a bomb in your rooms." Our assistant was flustered, but the teachers seemed unconcerned, and the principal later explained that phony bomb threats had become a routine occurrence at the school.

The 1972 questionnaire was approximately half the length of previous ones, and was not nearly as time-consuming for respondents. Our rate of return was better than in previous years. We obtained returns for all Keele schools, secondary schools in the other two districts, eight of Abington's ten elementary schools, and sixteen of Findlay's seventeen elementary schools. We obtained a 71 percent return of questionnaires from Keele, 78 percent from Abington, and 75 percent from Findlay.

The reader may wonder how much one can rely on data when their collection encountered the misadvantures we have described. When the return rate from a school was low, how inaccurate was our assessment of that school? When respondents resented being lectured on the evils of sex education, how did that affect their answers on the questionnaire? We can, of course, give no answers to questions such as those, and the truth is that we did worry.

But the proof of the pudding is in the eating. We shall see in Part III that the data fell repeatedly into patterns that made sense. That fact is our best assurance that respondents were telling us more about what went on in their schools than about their reactions to the administration of the questionnaires and that the instances of low return rate did not throw the data into chaos.

As to instances of low return rate, it may be that many of our questions were less susceptible to bias from low return rate than some other kinds. Many of our questions asked respondents to act as observers and reporters of conditions in their schools (see below). The averages we took over those items amounted to average judgments of conditions and events in the school. For items like that, it may be that 40 or 50 percent of staff in a school gave us almost as reliable a judgment as 90 percent would have done. The point will arise again in Chapters 5 and 9. Finally, the reader will find several aspects of the reliability and validity of our data discussed in Appendix B, entitled "How Good Are the Data?"

QUESTIONNAIRE ITEMS AND TESTS

Most of the questionnaire items we used had been used in previous work by other researchers, notably Jongeward and Giammetteo of the North-

west Regional Laboratory in Portland, Oregon; Gross and Herriott (1965) in their "Educational and Professional Leadership Questionnaire"; Abbott, Pellegrin, and Eidell in their early Program on Innovations at CASEA; and Mial, Watson, Buchanan, and Klein of the Cooperative Project for Educational Development. We selected items from those sources because of the relevance of the items to the information we sought and their productive application in prior research. We make specific acknowledgments at the end of this chapter.

We wrote several of the questionnaire items specialy for this study. As our technology and theory began to emerge during the early portions of the work, it became apparent that we needed to gather information on variables initially overlooked.

Reliability and Validity

Are our indicators valid? Our claims to validity rely heavily on the idea of "construct valitity." That is, the outcomes we set forth in Chapters 5 through 8 seem mostly to support one another and to make sense from the theoretical point of view we set forth in Chapter 3. We claim that one would be putting far too much confidence in chance to say all the outcomes in Chapters 5 through 8 just happened to fall together, that they just happened to fit well with other researches and with the theory of Chapter 3, and that our questionnaire items just happened this one time to indicate correctly the behavior we hoped they would indicate. The much simpler explanation is that most of the items did indicate to a considerable degree the behavior we thought they did, that the findings in the chapter do come to strengthen one another, and the theory is worth using as a guide.

The usual methods of calculating reliability are not suited to the uses to which we put questionnaire items in the Keele project. We could not use the test-retest method, because we expected responses to change as the months went by. We could not retest immediately, because the school people in Keele would not have sat still for being asked the same question twice in a short period, or at least that is our belief. We could not use the split-half method, because the tests we made from items were too short; the estimates would have been too unreliable. We might have used the alternate-forms method if we had known early enough exactly what we wanted to assess—but we didn't.

Given the pool of items with which we found ourselves in 1972, we did succeed in constructing some tests that gave us a cross between alternate forms and what Campbell and Fiske (1959) call "trait convergence," a form of validity. As will be seen below, we collected items into four different tests of Communication-during-Emotion, two tests of Openness-to-Information, and two tests of Responsiveness. Since the several forms of those three tests behaved in the same way in regard to outcome variables, our confidence is increased that we knew what we were doing. But the different forms were not alternate forms in the strict sense. They were more like different views of the same variable than interchangeable or equivalent forms. On the other hand, they were not different methods

(being in every case short questionnaires) as Campbell and Stanley would require. So our several tests of the same variables gave us something between reliability and validity. We discuss other matters of validity in Appendix B. For other subtleties of validity, reliability, and generalizability, see Chapter 6 of Runkel and McGrath (1972), Runkel (1978), and Chapter 11 of the *Second Handbook*.

Constructing Tests

Although we administered our questionnaires four times between 1968 and 1972, we did not really begin to analyze the data until 1972. As we mentioned before, our theory was much more detailed at the end of the project than at the beginning. At the end of the project, consequently, we found ourselves having to take data from questionnaire items written with earlier and less pointed concepts in mind.

How could we assess a theory taking form in 1973 and '74, using test items largely written in 1968 or before? We did the obvious: we looked back over our questionnaire items and selected those we though would be the best indicators of the variables in our later theory.

In addition to inspecting results of the individual items, we often picked several items that all dealt with the same sorts of matters and grouped them together into a "test" of a certain skill. For instance, we found several questionnaire items that were all administered over four years to make up the test of skill in *Communication-during-Emotion*.

Some items are included in more than one test because we feel they are valid indicators of more than one variable. For instance, item 6 (see below) asked-respondents to list the organizational members they talked to about serious matters. We used that item to assess "openness" or the skill of exchanging work-related information; we also used it as an indicator of the existence of a school's "linkages" or communication channels.*

List of Tests and Questionnaire Items

The following pages contain a list of all the tests and questionnaire items used to obtain the data presented in this book. More detailed explanations of the meaning and implication of the tests and items will appear in Chapters 5 through 7.

We collect all the questionnaire items here so that the reader can scan the list and get a quick impression of the kinds of evidence we shall be analzing in later chapters. As we take up each cluster of items in later chapters, we shall describe their content briefly and give their numbers

*In past years, many social scientists insisted that an item could be given only one interpretation (as an "operational definition") and used in only one test. We disagree. We feel that an item like item 6 can encompass information about more than one characteristic or ability in a school. Respondents can, in fact, respond to several aspects of the item simultaneously. Using items in different combinations for testing different hypotheses can illuminate both the conceptual meaning of our variables and the empirical meaning of the items themselves. Our logic follows that of the multi-trait multi-method paradigm (Campbell and Fiske, 1959). The logic is also the same as assigning "loadings" to an item on two or more "factors."

so that the reader who wishes can turn back and find them here. Some readers may wish to skip the next section at this point and refer to it later.

The numerals in brackets tell how we scored the items. The term "favorable" indicates the choice of response we hypothesized would be chosen more frequently after training. The words and numerals did not, of course, appear on the actual questionnaires.

Chapter 5

First test on Communication-during-Emotion (Test A)

1. Suppose a teacher (let's call him or her Teacher X) feels hurt and "put down" by something another teacher has said to him. In Teacher X's place, would most of the teachers you known in your school be likely to tell the other teacher that they felt hurt and put down?

( ) Yes, I think most would. [1 Favorable]
( ) Maybe about half would. [2]
( ) No; most would *not*. [3 Unfavorable]
( ) I don't know. [Not tallied]

2. Suppose you are in a committee meeting with Teacher X and the other members begin to describe their personal feelings about what goes on in the school; Teacher X listens to them and tells them his own feelings. How would you feel toward X?

( ) I would approve strongly. [1 Favorable]
( ) I would approve mildly or some. [2]
( ) I wouldn't care one way or the other. [3]
( ) I would disapprove mildly or some. [4]
( ) I would disapprove strongly. [5 Unfavorable]

3. Suppose Teacher X is present when *two others* get into a hot argument about how the school is run. If teachers you know in your school were in Teacher X's place, what would most of them be likely to do? Would they try to help each one in the argument to understand the viewpoint of the other?

( ) Yes, I think most would. [1 Favorable]
( ) Maybe about half would. [2]
( ) No; most would *not* do this. [3 Unfavorable]
( ) I don't know. [Not tallied]

4. Suppose you are in a committee meeting with Teacher X and the other members begin to describe their personal feelings about what goes on in the school; Teacher X quickly suggests that the committee get back to the topic and keep the discussion objective and impersonal. How would you feel toward X?

( ) I would approve strongly. [1 Unfavorable]
( ) I would approve mildly or some. [2]
( ) I wouldn't care one way or the other. [3]
( ) I would disapprove mildly or some. [4]
( ) I would disapprove strongly. [5 Favorable]

First test on Openness-to-Information (Test B)

5. Suppose Teacher X strongly disagrees with something B says at a staff meeting. In Teacher X's place, would most of the teachers you know in your school seek out B to discuss the disagreements?

( ) Yes, I think most would do this.	[1 Favorable]
( ) Maybe about half would do this.	[2]
( ) No; most would *not*.	[3 Unfavorable]
( ) I don't know.	[Not tallied]

6 and 7. Perhaps there are some people in your organization with whom you talk rather frequently about matters important to you. Please think of people with whom you talk *seriously about things important to you*, inside or outside formal meetings, *once a week or more* on the average. Write their names below. (If there are fewer than six people with whom you talk once a week about matters important to you, write down only as many as there are; if none, write "none." If there are more than six, list just the six with whom you feel your conversations are the most satisfying.)

> [Spaces were provided on the questionnaire in which to write names. We scored item 6 by calculating the mean number of persons that teachers-and-others named in response to the question. In teachers-and-others, we included teachers, teacher's aides, assistant teachers, department heads, counselors, librarians, and nurses. Item 7 was the same as item 6, except that the responses came from principals only.]

First test on Responsiveness (Test C)

8. Suppose Teacher X wants to improve his classroom effectiveness. If X asked another teacher to observe his teaching and then have a conference about it afterward, how would you feel toward X?

( ) I would approve strongly.	[1 Favorable]
( ) I would approve mildly or some.	[2]
( ) I wouldn't care one way or the other.	[3]
( ) I would disapprove mildly or some.	[4]
( ) I would disapprove strongly.	[5 Unfavorable]

9. Suppose Teacher X develops a particularly useful and effective method for teaching something. In Teacher X's place, would most of the teachers you know in your school describe it briefly at a faculty meeting and offer to meet with others who wanted to hear more about it?

( ) Yes, I think most would do this.	[1 Favorable]
( ) Maybe about half would do this.	[2]
( ) No; most would *not*.	[3 Unfavorable]
( ) I don't know.	[Not tallied]

10. Suppose Teacher X wants to improve his classroom effectiveness. In Teacher X's place, would most of the teachers you know in your building ask another teacher to observe his teaching and then have a conference afterward?

( ) Yes, I think most would do this. [1 Favorable]
( ) Maybe about half would do this. [2]
( ) No; most would *not*. [3 Unfavorable]
( ) I don't know. [Not tallied]

Second test on Communication-during-Emotion (Test D)

11. Suppose Teacher X were present when two others got into a hot argument about how the school is run. And suppose Teacher X tried to get them to quiet down and stop arguing. How would you feel about the behavior of Teacher X?

( ) I would approve strongly. [1 Unfavorable]
( ) I would approve mildly or some. [2]
( ) I wouldn't care one way or the other. [3]
( ) I would disapprove mildly or some. [4]
( ) I would disapprove strongly. [5 Favorable]

12. Suppose Teacher X were present when two others got into a hot argument about how the school is run. Suppose Teacher X tried to help each one to understand the views of the other. How would you feel about the behavior of Teacher X?

( ) I would approve strongly. [1 Favorable]
( ) I would approve mildly or some. [2]
( ) I wouldn't care one way or the other. [3]
( ) I would disapprove mildly or some. [4]
( ) I would disapprove strongly. [5 Unfavorable]

Second test on Openness-to-Information (Test E)

13. Suppose Teacher X strongly disagrees with something B says at a staff meeting. In Teacher X's place, would most of the teachers you know in you school keep it to themselves and say nothing about it?

( ) Yes, I think most would do this. [1 Unfavorable]
( ) Maybe about half would do this. [2]
( ) No; most would *not*. [3 Unfavorable]
( ) I don't know. [Not tallied]

Second test on Responsiveness (Test F)

14. Suppose Teacher X wants to improve his classroom effectiveness. In Teacher X's place, would most of the teachers you know in your building ask other teachers to let him (Teacher X) observe how the other teachers teach, to get ideas how to improve their own?

( ) Yes, I think most would do this. [1 Favorable]
( ) Maybe about half would do this. [2]
( ) No; most would *not*. [3 Unfavorable]
( ) I don't know. [Not tallied]

15. Suppose Teacher X develops a particularly useful and effective method for teaching something. In Teacher X's place, would most of the

teachers you know in your school try to get administration backing for a project to get other teachers to use the method?

( ) Yes, I think most would do this. [1 Favorable]
( ) Maybe about half would do this. [2]
( ) No; most would *not*. [3 Unfavorable]
( ) I don't know. [Not tallied]

16. Suppose Teacher X wants to improve his classroom effectiveness. In Teacher X's place, would most of the teachers you know in your building ask the principal to observe his teaching and then have a conference afterward?

( ) Yes, I think most would do this. [1 Favorable]
( ) Maybe about half would do this. [2]
( ) No; most would *not*. [3 Unfavorable]
( ) I don't know. [Not tallied]

17. Suppose Teacher X wants to improve his classroom effectiveness. If X asked another teacher to let him (X) observe the other teacher teach, how would you feel toward X?

( ) I would approve strongly. [1 Favorable]
( ) I would approve mildly or some. [2]
( ) I wouldn't care one way or the other. [3]
( ) I would disapprove mildly or some. [4]
( ) I would disapprove strongly. [5 Unfavorable]

Chapter 6

Third test on Communication-during-Emotion (Test G)

[The first item in this test was the same as item 1 above.

[The second item was the same as item 4 above.

[The third item was the same as item 5 above.

[The remaining three items of this test—namely 18, 19, and 20—all refer to meetings of staff members. In 1970 the respondent could refer to several kinds of meetings; for the analyses in this book, however, we took the data of that year only from respondents who named *staff* meetings as their referent. Other respondents were arbitrarily assigned the school's mean as their answers to the items. In 1972, the introduction to the items was re-worded to refer only to staff meetings. In 1970, the introduction to the items read as follows.]

The philosopher Martin Buber once said, "All life is meeting." No matter how that statement makes you feel, you will probably agree that school systems hold a lot of meetings, and that much depends on their quality. Please think specifically of some series of meetings: either meeting of the entire faculty of your building (*staff meetings*) or meetings in which only a part of the faculty meets (*committee meetings*). Name of the meeting you are considering: _____

Key

Now please consider what usually or typically happens in this meeting. For each of the items below, put one of the following numbers:

5 This is *very* typical of this meeting; it happens *repeatedly*.
4 This is fairly typical of this meeting; it happens *quite often*.
3 This is more typical than not, but it doesn't happen a lot.
2 This is more untypical than typical, though it *does happen some*.
1 This is quite untypical; it *rarely* happens.
0 This is not typical at all; it *never* happens.

18. People are afriaid to be openly critical or to make good objections. [The choices offered for item 18 were those in the key, but were scored with reversed favorability; that is, code 0 was scored as most favorable.]

19. People hesitate to give their true feelings about problems which are discussed. [Reversed favorability]

20. People give their real feelings about what is happening during the meeting itself. [Code 5 scored as most favorable]

Test on Procedures-in-Meetings (Test H)

21. Length of typical meeting: _____

[Coding went as follows, with longer meetings taken to be favorable:
0 Typical meeting lasts 0-15 minutes
1 16-30 min. (or half-hour)
2 31-45 min. (or three-quarters of an hour)
3 46-60 min. (or one hour)
4 61-90 min. (or one and a half hours)
5 91-120 min. (or two hours)
6 121-150 min. (or two and a half hours)
7 151-180 min. (or three hours)
8 More than 180 min. (more than three hours)]

[Items 21 through 40, like items 18 through 20, all refer to meetings of staff. For the instructions to the respondents for items 22 through 40, see the explanation preceeding item 18.]

22. The group discusses the pros and cons of several different alternative solutions to a problem. [Code 5 scored as most favorable]

23. The same few people seem to do most of the talking during meeting. [Reversed]

24. There is a good deal of jumping from topic to topic—it's often unclear where the group is on the agenda. [Reversed]

25. The same problems seem to keep coming up over and over again from meeting to meeting. [Code 5 favorable]

26. When the group is supposedly working on a problem, it is really working on some other "under the table" problem. [Reversed]

27. There are splits or deadlocks between factions or subgroups. [Reversed]

Test on Effectiveness-in-Meetings (Test I)

28. When problems come up in the meeting, they are thoroughly explored until every one understands what the problem is. [Code 5 favorable]

29. There is a tendency to propose answers without really having thought the problem and its causes through carefully. [Reversed]

30. People bring up extraneous or irrelevant matters. [Reversed]

31. Decisions are often left vague—as to what they are, and who will carry them out. [Reversed]

32. People do not take the time to really study or define the problem they are working on. [Reversed]

33. When a decision is made, it is clear who should carry it out, and when. [Code 5 favorable]

34. People don't seem to care about the meeting, or want to get involved in it. [Reversed]

35. When the group is thinking about a problem, at least two or three different solutions are suggested. [Code 5 favorable]

36. The results of the group's work are not worth the time it takes. [Reversed]

37. People feel very committed to carrying out the solutions arrived at by the group. [Code 5 favorable]

38. Solutions and decisions are in accord with the chairman's or leader's point of view, but not necessarily with the members'. [Reversed]

39. The discussion goes on and on without any decision being reached. [Reversed]

40. People feel satisfied or positive during the meeting. [Code 5 favorable]

Chapter 7

Test on Awareness of Functioning Communication Channels (Test J)

41 (Part A). Perhaps there are some people in your organization with whom you talk rather frequently about matters important to you. Please think of people with whom you talk *seriously about things important to you*, inside or outside formal meetings, *once a week or more* on the average. Write their names below. (If there are fewer than six people with whom you talk once a week about matters important to you, write down only as many as there are; if none, write "none." If there are more than six, list just the six with whom you feel your conversations are the most satisfying).

[Space for six names]

41 (Part B). Now look back at the above question. Perhaps you know whether some of the six people talk *to each other* about matters important to them. Please look at each pair of names and indicate the pair(s) of persons you have reason to believe talk to each other *once a week or more* about matters important to them.

[Fifteen pairs of numbers were displayed; the respondent circled appropriate pairs. Then, using the following steps, we computed the average number of communication links accurately identified by the respondents in each school. A communication link was identified as a pair of persons who *stated they talked* to each other once a week or more about matters important to them.

[*Step 1.* We ascertained if the respondent had told us, in response to Part B, whether a particular pair of persons talked to each other. A plus one (+1) was assigned to each of these instances. A minus one (−1) was assigned to the case(s) where the respondent said a pair of people did not talk to one another.

[*Step 2.* From their own responses, we ascertained whether the pairs of persons identified in Step 1 in fact said that they did or did not talk to one another. A plus one (+1) was assigned to each pair of persons of whom both said they talked to each other. A minus one (−1) was assigned to each pair of persons of whom only one or neither said they talked to each other.

[Step 3. The values assigned to a given pair in Step 1 (+1 or −1) were then multiplied by the values given that same pair in Step 2 (+1 or −1). This product tells us whether the respondent guessed right (a positive product) or wrong (a negative product) about that communication link.

[*Step 4.* The procedures in Step 3 were repeated for all pairs and all combinations mentioned by respondents. The raw scores could range from +15 to −15 for each individual. The scores were averaged and reported as the mean number of communication links accurately identified within each school.]

Test on Communication with Interdependent Others when Choosing Teaching Methods (Test K)

42 (Part A). This item concerns the *choice of teaching methods you use in your classroom.* Please mark "x" before the *one* statement below that best describes *your* part in deciding upon the teaching methods to be used in your classroom.

( ) I choose the scope and sequence of subject-matter content without assistance or direction. [1]

( ) The final choice of scope and sequence of subject matter content is left to me, but there are others whose job includes making recommendations or suggestions. [2]

( ) Within certain limits I can choose the scope and sequence of subject-matter content. [3]

( ) As a member of a group or committee, I share with others the job of deciding the scope and sequence of subject-matter content. [4]

( ) I do not choose the scope and sequence of subject-matter content. They are laid down for me by others.

[Responses coded *2* and 4 were counted as favorable.]

42 (Part B). If you chose answer *2, 3,* 4, or 5 in the question just above, you were indicating that at least some other person or persons were somehow involved in deciding upon the teaching methods to be used in your classroom. If you chose answer *2, 3,* 4, or 5, please write below the names and positions of the other persons involved.

[Space for writing. The favorable score was the number of persons written in.]

Test on Decision Making by Teachers Concerning Curriculum and Student Conduct (Test L)

43. Regardless of the official policy, who *actually* develops the school curriculum? Please mark one or more choices below.

( ) I don't know who actually does this
( ) Citizens' or parents' committee
( ) Board of Education
( ) Superintendent
( ) Instructional Supervisor
( ) Principal
( ) Department head or grade chairman
( ) A group of teachers
( ) The individual teachers
( ) Counselor (s) or guidance director
( ) School psychologist
( ) A student committee
( ) Other; specify _____

[Favorable response was "a group of teachers."]

44. Regardless of the official policy, who *actually* develops regulations for student conduct?

[Same choices offered as in item 43 above. Favorable response was "a group of teachers."]

Test on Reaching Out to Colleagues in Decision Making (Test M)

45. When you want to receive approval from faculty in your school for an idea you are proposing, it is sometimes helpful to enlist the support of certain individuals in your school. Please list below, by name and position, the individuals whose support for your ideas would help most in obtaining faculty approval.

[Favorable score was number of persons listed.]

46. [The wording of this item was the same as item 42 (Part A) above;

the favorable answer here was code 2: "The final choice . . . is left to me, but there are others. . . ."]

47. [The wording of this item was the same as item 42 (Part A) above; the favorable answer here was code 4: "As a member of a group or committee. . . ."]

Item analyzed singly

48 (Part A). [Part A of this item was the same as Part A of item 41.]

48 (Part B). Who are the persons, if any, whose jobs are so closely related to yours that you believe the two jobs *must* be performed collaboratively if either of you is to perform his work effectively? Please write their names.

[Space for writing.

[For each match (same person named in both parts), the respondent was credited with a favorable count of one.]

We adapted items 1 through 5 and 8 through 17 from items kindly supplied us by Ray Jongeward and Michael Giammetteo of the Northwest Regional Educational Laboratory in Portland, Oregon. We borrowed items 18, 19, 20, and 22 through 40 from the Cooperative Project on Educational Development (COPED). We are grateful to Max Abbott, Terry Eidell, and Roland Pellegrin of the early Program on Innovations at CASEA for items 42 and 44 through 48. The remaining items are our own.

Part III

THE DATA

Introduction

In the next four chapters, we shall be answering the question: "How do you know that the OD training you gave to school organizations in Keele accomplished anything?"

In Part I, we told a tale of school people struggling against many kinds of odds,—struggling because of their yearning for a more rewarding life at school for themselves, their students, and their colleagues. Their struggle, essentially, was against themselves—their low expectations of one another, their low trust in one another, their low skill in joining together for mutual benefit. We have told you their yearnings and our yearnings for them. We described sub-projects that included training in communication and problem solving conducted either by CASEA or by the Cadre. We gave some indication that some of the training with schools had results almost everyone on the school staff found profitable, that some had minor benefits, and that some were resented by school staff.

In Chapter 3, we told our thoughts about what probably makes OD consultation and training effective and what makes it weak. We said that a school should be organized so that it can make collaborative use of human resources; and that working collaboratively almost always requires a school to learn new interpersonal group, and intergroup skills. We said we thought that a school staff would have a very hard time becoming more skillful in solving problems in groups, for example, unless its members had first become sufficiently skillful in communicating despite heightened emotion, in giving and receiving more information that is commonly the case, and in eliciting active response from those who receive the information. We said we thought functional groups (subsystems) in a school would have a very hard time coordinating their work to mutual benefit unless each group had built within itself skills that supported accurate and open communication through the channels built by the groups, skills in division of labor that would enable the groups to coordinate for different purposes with different people at different times, and so on.

In Chapters 5 through 8, we offer countable facts. What kinds of profit

can a staff get out of OD training? How much training is necessary before a staff can reap some benefit? Do structural changes in schools, by themselves, force the improvement of certain interpersonal or group skills? How long do new communicative skills last? When a school adopts an innovation that calls for new organizational procedures—like team teaching, for example—how much does OD training help the innovation work? To what extent can an organizational innovation get going without organizational training? How many months or years need go by before you can be sure an organizational innovation has "taken?" Those questions are among the ones a principal or superintendent might ask if he or she were captivated by the first part of this book and now wanted to get practical. Chatpers 5 through 8 will give information that begins to answer the questions just set forth, and some others as well.

Chapter 5

Effects of Training on Responsiveness Among Staff in Elementary Schools

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In this chapter, we shall examine effects that OD training had upon the responsiveness of teachers to one another in the elementary schools of Keele. As we go along, we shall note the effects of training on heightening communication in emotional situations and on openness to communication. We shall note, too, how long the effects lasted among teachers after training.

The findings in this chapter rest on patterns of responses to questionnaire items. Before presenting the findings, therefore, we must explain our selection of questionnaire items and their clustering into "tests."

MARSHALLING THE DATA

We explained in Chapter 4 how we chose questionnaire items and in Chapter 3 how our theoretical ideas evolved during the project. We explained, too, how we left analysis of the data from questionnaires until

1972. We began our attack upon our mountain of data by selecting questionnaire items that seemed to us to be indicators of skill at the first level: that of interpersonal skill.

Tests of Interpersonal Skills

We found that we had used a good number of questionnaire items as indicators of first-level or interpersonal skill, but we had only used a few of them in all four years in which questionnaires were administered: 1968, '69, '70, and '72. From the items administered in all four years, we were able to form clusters of items with which we could test three kinds of interpersonal skills in a school: (1) readines to continue communication during emotion, (2) openness to communication among staff members, and (3) responsiveness to initiatives and requests from others.

*Test A on Communication-during-Emotion.** This test was an indicator of the readiness of a school staff to maintain constructive communication in situations. It was comprised of four questionnaire items: those numbered 1 through 4 in the list in Chapter 4. The first dealt with communicating about feeling hurt or put down; the second and fourth with approving or disapproving a person who tells her or his personal feelings in a meeting; and the third with helping two persons in a hot argument understand each other's viewpoint. When a large percentage of staff members in a school answered those items in the favorable direction (toward continuing to communicate), that school received a high score on test A.†

An examination of items 1 through 4 suggests several related qualities that a high score on test A could indicate. A high score could indicate that staff members thought they or their colleagues should or would accept emotions as relevant matters to be dealt with, and a low score the opposite. A high score probably indicated, too, a readiness among the staff to get information from others about the meanings of actions and about commitment to courses of action. Finally, test A touches on the skill of bringing into view personal abilities and resources. If we consider ideas to be "personal resources," then being able to exchange emotionally charged ideas is being able to bring into view personal resources that are suppressed in most groups. That cluster of qualities is what we shall have in mind when we talk about test A or "Communication-during-Emotion."

Test B on Openness-to-Information. Items for this test were chosen to indicate the ability of a school staff to elicit, offer, and circulate information in the school. We put into this test the items numbered 5, 6, and 7 in Chapter 4. Item 5 asked whether a teacher would seek out another with whom he or she had a disagreement in order to discuss it further. Item 6 ascertained the number of staff with whom the respondent talked seriously about important matters, and item 7 ascertained the same thing about the principal. The emphasis in test B is on the accessibility of staff members for

*We shall give each test both a name and a letter-label to facilitate references in various contexts.

†Chapter 4 shows these questionnaire items and others in full and indicates the "favorable" response. Document ED 111 107 gives details about scoring.

communication. A school's score on this test rose when a larger percentage of staff answered the three items in the communicative direction.

Test C on Responsiveness. Two of the items in this test posed hypothetical situations in which a teacher wanted to improve his or her classroom teaching. One of those items asked how many teachers in the school, having that desire, would ask another teacher to observe their teaching and confer about it afterward. The other asked whether the respondent would approve a teacher asking another to observe his or her teaching. The third item supposed that a teacher had developed a particularly useful and effective method for teaching something, and asked how many teachers in the school, having developed such a method, would describe it at a staff meeting and offer to talk more with those interested. The three items were numbered 8, 9, and 10 in Chapter 4. This test gave the higher score to the school in which the larger percentage of teachers gave answers indicating responsiveness to requests for help or to offers of help.

Interpreting the items. The reader may have noticed, in glancing through the questionnaire items displayed in Chapter 4, that we rarely asked the respondent about their own behavior. Instead, most items asked the respondents to be observers and reporters of the behavior of others (though at times including themselves) in their school. We did not interpret the items to be telling us something about the individual respondent, but rather to be telling us something about the school. The average in a school of scores on that kind of item can be considered an average of observers' judgments about their colleagues.

PREDICTIONS

Obviously, we were predicting that the training we and the Keele Cadre gave would elevate the scores of schools on each of the tests A, B, and C, on the average, over those of elementary schools that did not receive training. But we also made a more complex prediction about the relative difficulty, so to speak, of acquiring the three skills. In brief, we predicted that effects of training would be greatest on test A and least on test C.

Test A seems to us to be the most basic of the three skills in three senses. First, it is the skill that is most directly affected by the training we and the Cadre gave in the four basic communication skills: paraphrasing, describing others' behavior, describing one's own feelings, and checking one's impressions of others' feelings. Second, our observation of those training events convinced us that Communication-during-Emotion was the skill most easily and readily acquired and applied by school staffs. Third, we thought it very unlikely that a staff would exhibit the skills of tests B and C unles they already had the skill of communicating in emotional situations; those skills depend on the skill of test A, but A does not depend on B and C. For those reasons, we predicted that effects of training would be greatest on test A.

In contrast, the skill of test C (responsiveness) seemed to us the most complex of the three and the most dependent on the other two skills. Re-

sponding to requests from other runs the risk of rebuff and possibly the risk of violating the norm of self-sufficiency so commonly found among teachers. This sort of responsiveness also requires a confidence in the respondent's own communicative skill as well as that of her or his colleagues. Since the skill of responsivenes seems to us to depend more on other skills and situations, we believed that the effects of training would be least on test C.

Further, because we thought responsiveness was a product (at least in part) of the skills of communicating during emotion and openness to information, we thought heightened skill in either of those processes (A or B) would make it more likely that a staff would show a heightened skill in responsiveness (C). Since we thought that communication during emotion was more basic than openness to information, we predicted that the former (A) would have a greater facilitating effect on responsiveness than would the latter (B).

In sum, we predicted that training would elevate scores on test A the most, test B next, and test C least. Further, we predicted that schools with the higher scores on test A or B would have the higher scores in test C, with the facilitating effect of test A being greater than that of test B. Finally, we predicted that the combination of training with high scores on either test A or B would show greater effects on test C than training alone or high scores on test A or B alone.

Having made those predictions, we proceeded to analyze the data. As we shall see, the data supported some of our ideas and caused us to modify others. But before we look at the data on tests A, B, and C, we need to say a little about the amounts of training received by the elementary schools in Keele.

SCHEDULE OF TRAINING

The variable of first interest was training. Seven elementary schools in Keele received enough training to make the results worth examining.* Table 5-1 shows the distribution of hours of training (excluding hours spent in entry, diagnosis, process consultation, survey feedback, and coaching, and including only training proper and follow-up training)† and the source of the consultants (trainers). The bulk of the training was devoted to first-level and second-level skills and group problems solving.

EFFECTS OF TRAINING ON THE THREE VARIABLES

When we examined the raw scores on tests A, B, and C, we discovered that there were noticeable changes from year to year both in the average

*We pointed out in earlier chapters that we did not think our work in the two high schools or in the junior high had enough impact to warrant analysis of the questionnaires administered there, and in any case there were two few schools at the secondary level to lend much hope to comparing them with other secondary schools.

†It is arguable whether we should have excluded process consultation, survey feedback, and coaching. Those activities were rare, however, and rarely included the entire staff. We described the training we gave in Chapter 1; more detail can be found in Appendix 5-C of Document ED 111 107.

level of schools in a district and in the spread of their differences among themselves. But our concern was not with influences that fell equally upon

Table 5-1

Total hours of training and follow-up consultation in elementary schools in Keele (excluding entry, diagnosis, etc.)

School	Hours between 1968 & 69 q'aire admin'ns	Hours between 1969 & 70 q'aire admin'ns	Hours between 1970 & 72 q'aire admin'ns	Total	Consultants
K12		18	28	46	CASEA and Cadre
K11	15		24	39	CASEA and Cadre
K14			27	27	Cadre
K15			22	22	Cadre
K13		10	5	15	Cadre
K02			14	14	Cadre
K05	6		6	12	CASEA and Cadre

Note: First questionnaire was administered in January 1968, second in May 1969, third in April 1970, and fourth in April 1972.

all the schools in a district, such as—to give arbitrary examples—changes in the district's budget or a national trend toward trials of team teaching. Nor were we much concerned with how close together or how far apart the schools scored on the tests. Instead, our primary interest was whether schools that had received the OD training would display scores on the tests different from schools that had not received the training. Therefore, to even out the differences in averages from year to year or from district to district, we converted the raw scores into "standard scores."

A standard score is obtained by taking all the raw school-scores in the district, subtracting the mean of the district from each school-score, and then dividing by the measure of spread of scores called the standard deviation. The result is a score that is much easier than raw scores to compare with one another. If a school's standard score is positive, you know that it is higher than the average school in the district; if negative, lower. If the standard scores of two schools are equal, you know that their scores, on the average, would exceed the same percentage of schools in the district, regardless of how many schools there were in the district. Moreover, if one school has the same standard score on test A that another school has on test B, you know that the two schools exceed the same percentage of schools on their respective tests, even though the tests are different. In brief, standard scores make it possible to compare the scores of two schools in a meaningful way, even if you are talking about different tests, different districts, or different years.

We calculated standard scores for each district and each year, so that the mean of the schools on every test in each year in each district was zero, and their standard deviation was one.

Training Made a Difference

When we compared the standardized scores of the elementary schools in the Keele district on the three tests, we found that the trained schools scored better than the untrained schools, on the average, on every test and in every year—though often not much better. Table 5-2 shows the means and the statistical significance of the differences. Overall, considering the pattern over the three years, the evidence is good that the training had at least a little of the kind of effect we had hoped on the three kinds of skill indicated by the tests A, B, and C.

Table 5-2 also shows a pattern that is consistent with our hypothesis about the relative difficulty of elevating the three skills. Trained and untrained schools showed statistically significant differences in 1970 and 1972 on Communication-during-Emotion (test A), but none of the comparisons within any one year on the other two tests was statistically significant. As we had predicted, the effects of the training showed up most strongly on test A.

The last pair of lines in the table shows the calculations when we treated every school in each separate year as if it were a separate case. That is, we took the scores from the twelve elementary schools that existed in Keele in 1969, those from the thirteen schools that existed in 1970, and those from the fifteen schools that existed in 1972, and pooled all those 40

Table 5-2

Means for trained schools and for untrained schools among elementary schools in Keele on Communication-during-Emotion (test A), Openness-to-Information (test B), and Responsiveness (test C).

Year of data	Schools	Test A Mean score	Test A p*	Test B Mean score	Test B p*	Test C Mean score	Test C p*
1969	Trained: K05, K11	.28	NS	.30	NS	.15	NS
	Untrained: the other ten schools	−.05		−.06		−.03	
1970	Trained: K05, K11, K12, K13	1.09	<.001	.34	NS	.44	NS
	Untrained: the other nine schools	−.48		−.15		−.20	
1972	Trained: K02, K05, K11, K12, K13, K14, K15	.58	<.05	.38	NS	.11	NS
	Untrained: the other eight schools	−.51		−.33		−.10	
All 3 years pooled (40 "schools")	Trained	.69	<.01	.36	<.06	.23	NS
	Untrained	−.33		−.17		−.11	

*Probability that the trained schools could have scored differently from the untrained merely by chance, calculated by the t-test. "NS" means not statistically significant; that is, that particular difference had a good probability of occurring merely by chance.

scores for each test as if we were examining 40 separate schools. Doing that gives a nice summary over the three years of data-collection, but it makes the calculation of the likelihood of random results (as shown in the columns headed "p") rather dubious. We can forego any claim about probability, however, and use the figures in the p-columns merely as indicators of the ordering of the differences between the trained and the untrained schools on the three tests.

Pooling the 40 "schools," the last pair of the lines in the table shows exactly the order that we predicted among the three tests when we thought about the difficulties of heightening the three skills. The difference between the means for trained and untrained schools was largest on Communication-during-Emotion (test A), less for Openness-to-Information (test B), and least for Responsiveness (test C). Correspondingly, the indicator of the likelihood of a merely chance result ("p") was least for test A, a little greater for test B, and greatest for test C.

So far, the results are gratifying, though they were not very strong in some years on some tests. It is nice to have some evidence (beyond our lingering impressions and emotions and the testimonials of some of our clients) that we and the Keele Cadre had succeeded in teaching some of the things we had intended to teach. But now, to look for evidence for our further hypotheses, we must turn to other arrangements of the data.

A and B Affected C

We predicted that schools scoring higher on test A or B would also score higher on test C—that Communication-during-Emotion and Openness-to-Information would have a facilitating effect on Responsiveness to colleagues. To look for that effect, we could not examine the data year by year, because there were too few schools; some of the possible classifications had no schools in them. Therefore, as we did for the calculation in the last two lines of Table 5-2, we pooled all 40 "schools" from 1969, 1970, and 1972. We then divided the 40 schools into the 20 highest and the 20 lowest on test A and again into the 20 highest and 20 lowest on test B. As it turned out, that put ten schools into each of the four resulting categories. Here are the means on Responsiveness (test C) for each of the four groups of ten schools:

		Test B	
		Low	High
Test A	High	—.18	.85
	Low	—.55	—.12

Again, the ordering of the data was about what we had predicted.* The table shows that the scores on Responsivenes (test C) were the highest,

*Though we ourselves put little confidence in it, because of several violations of the probabilistic assumptions necessary, we performed a two-way analysis of variance on the data in the table as a courtesy to those readers who might be curious. Row effects and column effects were both significant with probabilities less than .05, and the interaction was significant with a probability less than .001.

on the average, among schools that were above the medians on both Communication-during-Emotion (test A) and Openness-to-Information (test B). The intermediate means, however, did not fall just as we had thought they would. Having a higher score on test A alone did not help the score on test C more than having a higher score on test B alone; in fact, the numbers in the table are the other way around, though the numbers are so close together that the difference is not important. The best conclusion is that each test A and B helped the score on C, and both together helped more than either one alone.

But what about the effects of *training* on Responsiveness when a school was high or low on test A or test B?

That Was True Separately for Trained and Untrained Schools

Pooling only the untrained schools from 1969, 1970, and 1972, we found the same pattern as above:

		Test B	
		Low	High
Test A	High	—.09 (7 schools)	1.49 (2 schools)
	Low	—.52 (9 schools)	—.08 (9 schools)

And for trained schools pooled, we found the same pattern again:

		Test B	
		Low	High
Test A	High	—.40 (3 schools)	.69 (8 schools)
	Low	—.82 (1 school)	—.50 (1 school)

That was reassuring. And now, of course, we expect training also to elevate Responsiveness, so we look in the two tables above, expecting the means for trained schools to exceed those for untrained schools—but we find exactly the opposite! How can we reconcile that result with Table 5-2?

Actually the explanation is not far to find. The schools were very unevenly distributed in the four cells both year by year and in the pooling. For example, the highest mean for untrained schools (1.49) came from only two schools. When the overall mean of untrained schools is taken, the scores of the two schools averaging to 1.49 are swamped by the lower scores of the other 25 schools. Similarly, among the trained schools, the low means of —.82 and .50 came from only one school each, and the overall mean is more greatly affected by the eight schools whose mean is .69.

In any case, the pooled analysis is worrisome, because it pools the same schools from different years, comparing trained schools in one year with untrained schools in another year, as well as trained and untrained in the same year, all mixed in varying proportions. That does not seem to be the best way to go about finding out what we want to find out.

But we cannot perform an analysis year by year using the four cells

given by the splits on tests A and B. We do not have enough schools. In some years, some cells would be empty. How can we analyze the data year by year and somehow estimate the effects of test A, test B, and training, all at once, on Responsiveness (test C)? Obviously, we need to combine the scores of A and B in some way so that schools can be split into only two groups by those tests, not four. To do that, we made use of the technique of nonmetric multidimensional scaling.

THE MULTIDIMENSIONAL SCALING

The technique of nonmetric multidimensional scaling takes measures of similarity among the schools and hunts for the simplest way of showing the similarities and dissimilarities in a geometric diagram, placing the more similar schools closer to one another and the more dissimilar schools farther from one another. We used the computer program called the Guttman-Lingoes MINISSA-I(M). We gave the computer the scores for each school on the three tests A, B, and C and, as we shall see, it succeeded in arranging the schools in two dimensions in a way that maintained almost all the relative similarities and dissimilarities encompassed by the the three tests. More information about the computer program appears in Appendix C.

The computer program began by calculating the product-moment correlations over the three tests between every pair of schools. The statistic tells how similar two schools are in their standard scores on the three tests. The correlation figure will be highest if the scores on the three tests are in the same order for the two schools and the differences between tests are the same for the two schools. The figure for correlation will be lower if the scores on the three tests fall in different orders, and they will be lower, too, if the *differences* between the scores on any two tests are different between the two schools.

The computer took the standard scores on the three tests for each school and translated those data into diagrams. The diagram the computer made for the data of 1968 is shown in Figure 5-1. Each number stands for a school. If two school-numbers are close together on the page, it means that the three standardized test scores for the two schools were more highly correlated then for two schools farther apart on the page. Using the computer program, it was possible for us to examine the relations among schools as indicated by all three kinds of skills in one simple diagram.

Look again at Figure 5-1. Notice that after the computer analyzed the similarities and dissimiliarities among the schools, it produced a plot in which there seemed to be *two clusters* of schools. One cluster lies at the left in Figure 5-1 and one at the right. We became more confident that the clustering meant something when we discovered that two clusters appeared in the analysis of every year.*

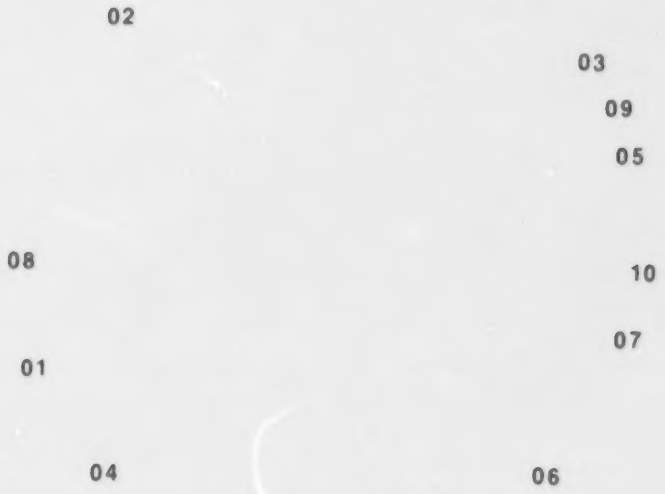
Figure 5-2 shows the diagrams for all four years. In Figure 5-2, we have

*The circular shape of the plots has no importance; the point is explained in Chapter 5 of Document 111 107.

added some dividing lines and labels. For example, the label "ABC" means that the schools whose numbers lie in that sector had their highest scores on test A, next highest on test B, and lowest on test C. The lines merely mark off the sectors labelled by the test-letters. It is now easy to see what characterized the two clusters.

Figure 5-1

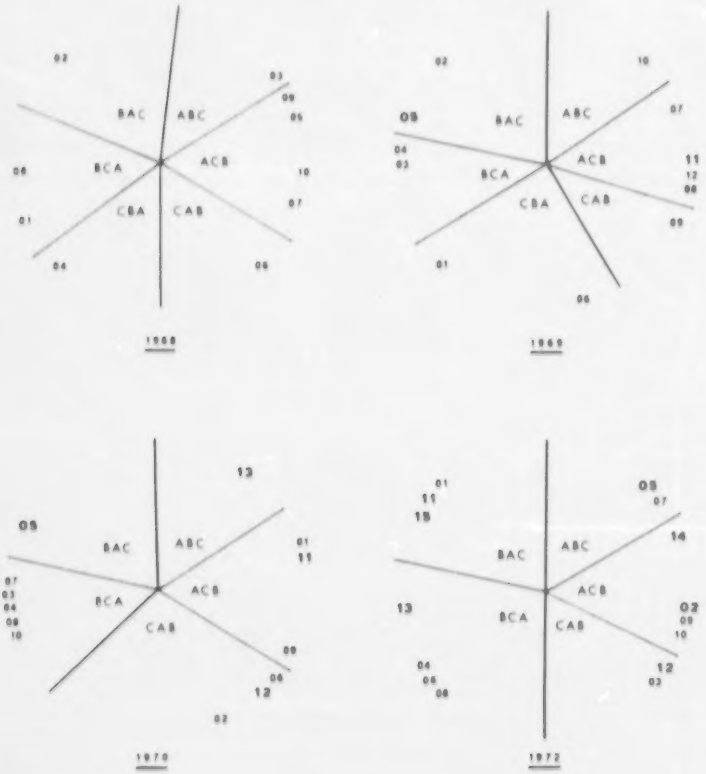
Similarities among Keele elementary schools
in respect to scores on tests A, B, and C in 1968.
Each number on the diagram
stands for a school.



In every year, the cluster lying at the left contains those schools whose scores on test B were higher than their scores on test A, while the schools in the cluster lying at the right had scores on test A that were higher than test B. In other words, in every year the schools in the left cluster had scores on Openness-to-Information (B) higher than their scores on Communication-during-Emotion (A), while the schools in the right cluster has their higher scores on Communication-during-Emotion.

Figure 5-2

Similarities among Keele elementary schools in respect to standard scores on tests A, B, and C



Notes: In each sector indicated by a triplet of letters, the first-listed letter tells the test on which the schools in that sector scored highest, the second tells the test on which they scored next highest, and the third the test on which they scored lowest. For Example, in 1968, school K02 scored highest on test B, next on A, and lowest on C.

A school whose number appears in bold face received training and consultation at some time previous to the year shown.

It was not a foregone conclusion that the schools would cluster by tests A and B. There was nothing in the computer program that forced them to do that. The clustering apparent in Figure 5-2 told us that AB schools (those having higher standard scores on test A than on test B) were more like one another on the three tests, regardless of where they fell on test C, than they were like the BA schools.

Another feature of Figure 5-2 is worth noting before we go on to look at numerical results: the "meandering" of the the schools from sector to sector. That is, the fact that a school's test scores fell in the order ABC in 1969 (for example) was no indication that they would fall that way in a later year. School K03, as an example, fell in the sector ABC in 1968, in BCA in 1969 and 1970, and in CAB in 1972. At least as indicated by the three tests A, B, and C, it was typical for the elementary schools in Keele to show considerable changeability from year to year. That was true, in general, of both trained and untrained schools. We shall present more evidence about "meandering" in Chapter 8.

As we hoped, the nonmetric multidimensional analysis showed us a way to divide the schools into two clusters, not into four as we had done earlier. It remains to discover how schools' scores on Responsiveness (test C) will fall in those two clusters. Figure 5-2 tells us that we can expect scores on test C to vary a good deal within each cluster of schools. Will they vary with training? If they do, will the variation be different in the two clusters? To answer those questions, the next step was to look at averages of the trained and untrained schools within each cluster. That is, within the data for each year, we shall look at the means on Responsivenes (test C) for each of these four groups of schools:

BA schools: those higher on Openness-to-Information (test B) than on Communication-during-Emotion (test A)	AB schools: those higher on Communication-during-Emotion (test A) than on Openness-to-Information (test B)
Trained	Trained
Untrained	Untrained

Effects of Training, Communication During Emotion, and Openness to Information on Responsiveness to Colleagues

Still using the school scores standardized within each year, we calculated the mean for the four groups of schools. Using the pattern shown above, Table 5-3 shows the means for each year. The table shows some remarkable regularities. First, the *untrained* schools in the two clusters differed little, on the average, in their Responsiveness (test C). Among the untrained schools, the largest deviation of the group means from the district's grand mean (zero) was only .38 in 1968; the other deviations ranged from zero to —.20.

Second, the pattern among *trained* schools was also very regular, but very different from the pattern of untrained schools. In every year in which there were trained schools, the mean of the trained AB schools (those scoring higher on Communication-during-Emotion than on Openness-to Information) exceeded the district's mean, and it did so by a considerable amount (.79 in 1969, .69 in 1970, and .82 in 1972). In contrast, in every year, the mean of the trained BA schools (scoring higher on Openness-to-

Table 5-3

Mean standard scores of elementary schools in Keele on Responsiveness (test C), grouped according to year, whether trained or untrained, and whether the group had scored higher on Communication-during-Emotion (test A) or Openness-to-Information (test B)

		BA: Schools higher Openness than on Communication-during-Emotion		AB: Schools higher on Communication-during-Emotion than on Openness		
		Mean on Responsiveness	No. of schools	Mean on Responsiveness	No. of schools	Difference
1968	Untrained	0.38	4	−0.25	6	−0.63
1969	Trained	−0.50	1	0.79	1	1.29
	Untrained	−0.00	5	−0.05	5	−0.05
1970	Trained	−0.30	1	0.69	3	0.99
	Untrained	−0.20	5	−0.20	4	0.00
1972	Trained	−0.77	3	0.82	4	1.59
	Untrained	−0.01	4	−0.23	4	−0.22

Information) fell *below* the district's mean (−.50 in 1969,−.30 in 1970, and −.77 in 1972).*

We had not expected the double-ended outcome among the trained schools. Table 5-3 taught us something. It taught us that there are certain conditions in which training can do more harm than good. We had suspected that there are conditions under which OD training does not "take" well. But our data tell us a particular condition under which the training not only did not take, but even seemed to depress responsiveness to colleagues below the levels of the untrained schools: the condition, that is, in which the school was less skillful in communication during emotion (test A) than in keeping open the channels for informaiton (test B).

We must note that the finding is not as clean as one would like. There is some confounding with amount of training. In 1969 and 1970, there was only one trained school in the BA cluster; that school received only about six hours of training. But in the AB cluster, the amount of training received by the one trained school in 1969 and the average amount received by the three in 1970 was in each case about fifteen hours. We shall see in Chapter 6 that amount of training made a considerable difference in three kinds of communicative skills, and it seems reasonable that it could have made a difference in responsiveness also.

But in 1972, the effect of the clusters was not confounded with amount

*By t-test, the chance probability of the difference between trained and untrained schools in 1972 in the BA cluster was less than .06; in the AB cluster, less than .09. The fact that the pattern was the same in each of the three years increases our confidence in its reliability.

of training. In both clusters in that year, the average amount of training received by the trained schools was about 25. We can unambiguously attribute the difference in responsiveness to the relative differences in the scores on Communication-during-Emotion and Openness-to-Information. And our confidence is increased by two further facts: the school that was the single trained school in the BA cluster in 1969 and 1970 appeared in the AB cluster in 1972, and the difference in responsiveness between the trained schools in the two clusters was larger in 1972 than in either of the previous years.

The Importance of Communication During Emotion

We had supposed that the ability to continue communicating during emotion was important to other interpersonal skills, and the data we have displayed in this chapter encourage us in that idea. The data are not conclusive, but they are encouraging. The data of Table 5-3 seem to be telling us that in those schools where the ability to communicate during emotion kept ahead of the openness of the communication channels, the staff's estimates of the responsiveness of their colleagues to requests for help and consultation were well above the district's average. But where the skill in communication during emotion did not keep up, staffs estimated their responsiveness to be well below the average. In fact, in *every one* of the instances of trained schools falling in the BA cluster, the school scored below the district's average on Responsiveness, even in those three instances when the schools lay above the medians on both tests A and B. Those data are displayed in Appendix D. If you want OD training to have good effect on responsiveness among teachers, the lesson seems to be: bring both communication during emotion and openness to information to levels well above the ordinary, but be sure that the skill of communication during emotion stays particularly high.

Corroboration

We selected certain questionnaire items for the tests A, B, and C because they were available in all four years of data-collection. There were other items that we thought also were indicators of the same three variables but were available only in three years: 1968, 1969, and 1970. We used them to check the analysis we have displayed so far. We believed that analysis with the second set of items should come out with about the same pattern as the first analysis.

The questionnaire items 11 and 12 (see Chapter 4) became test D on Communication-during-Emotion. Item 13 became test E on Openness. Items 14 through 17 became test F on Responsiveness. We processed the data in exactly the same way we had done with A, B, and C.

To make a long story short, we shall describe here only the multidimensional analysis corresponding to Table 5-3. The geometric plots for tests D, E, and F were similar to Figure 5-2.*

*Diagrams and details of the further analysis of tests D, E, and F are given in Chapter 5 of Document ED 111 107.

In 1969, untrained schools did not follow the same pattern they did with tests A, B, and C, but trained schools showed exactly the same pattern. By 1970, the pattern shown by tests D, E, and F among both trained and untrained schools was identical with the patterns for 1970 and 1972 in Table 5-3. Indeed, as we see in Table 5-4, the magnitude of the differences shown by tests D, E, and F were even larger than the differences we saw in Table 5-3.*

In sum, tests D, E, and F corroborate the findings with tests A, B, and C.

Table 5-4

Mean standard scores of elementary schools in Keele in 1970 on Responsiveness (test F), grouped according to whether trained and whether the group had scored higher on Communication-during-Emotion (test D) or Openness-to-Information (test E)

	ED: Schools higher on Openess than on Communication-during-Emotion		DE: Schools higher on Communication-during-Emotion than on Openness		
	Mean on Responsiveness	No. of schools	Mean on Responsiveness	No. of schools	Difference
Trained	−0.53	2	1.40	2	1.93
Untrained	0.46	3	−0.52	6	−0.98

MAINTAINING RESPONSIVENESS

We have seen that OD training seemed to have an overall effect of heightening the trained schools' skill in responsiveness to colleagues. We have also seen that the effect was especially strong in schools where the skills of communication during emotion and openness of channels to information were both high and communicative skill was especially high. There is also evidence that the skill of responsiveness lasted longer in the trained schools than the untrained schools. For one thing, we saw in Table 5-3 that the mean of the trained AB schools was higher in 1972 than in any previous year. But there is more.

In almost any kind of behavior that members of an organization display, the mean will vary a good deal from time to time. The "meandering" of school means on responsiveness from year to year can be seen in the table in Appendix D. (And we shall see in Chapter 8 the same kind of meandering in choice of innovation.) Because schools' scores went up and down from year to year, it is natural to expect that if a school's score is high in one year, the most likely thing is that it will be lower the next year. The phenomenon is similar, though not identical, to the well known statistical

*By t-test, the chance probability of the difference between trained and untrained schools in the AB group is less than .08.

phenomenon of regression toward the mean.* Since dropping back, once a high score is reached, is the ordinarily expected thing, we can claim that trained schools maintained their responsivenes better if we find that they dropped back to a lesser degree than untrained schools.

Our prediction, then, is that untrained schools dropped back farther from high scores on responsiveness than did trained schools. To test the prediction, we selected all instances in which schools had scores on Responsiveness (test C) higher than .50; that was a figure a substantial distance above the district's mean (zero) but low enough to give us a fair number of instances. Here is the list of untrained schools; the scores dropped in every instance:

Untrained schools
K01, at 1.73 in 1968, went down to .19 in 1969.
K03, at 1.07 in 1969, went down to .34 in 1970.
K08, at .83 in 1968, went down to —.47 in 1969.
K09, at .64 in 1970, went down to —.56 in 1972.
K04, at .58 in 1968, went down to —.02 in 1969.
K06, at .54 in 1969, went down to .13 in 1970.

The behavior of trained schools that were (in some year prior to 1972) higher on Responsiveness than .50 was in clear contrast to the untrained schools:

Trained schools
K12, at 1.91 in 1969, went *up* after training to 2.80 in 1970.
K12, at 2.80 in 1970, went down to 2.57 in 1972.
K11, at .79 in 1969, went down to .34 in 1970.

Let us examine each of the instances in turn. We see that school K12 provided us the only instance of a school overcoming the regression effect to such an extent that it actually *increased* its mean on Responsiveness. That is, among instances of schools standing above 0.50 on test C, school K12 provided the only instance of a school to be found even higher at the next assessment.

School K12 also provided us the next instance. At first glance, the fact that K12's score went from 2.80 in 1970 to 2.57 in 1972 looks like a descent. Relatively, however, it was not In 1972, K12's score on Responsiveness *remained the highest* of all the Keele elementary schools; its nearest competitor reached only to 1.31 (see Appendix D).

The third instance was the weakest. But if we look closely, we discover that even school K11 resisted slipping back *better than any untrained school*. Looking back at the list of untrained schools, we see that only K03 managed to stay *as high* the next year as .34, and it had been at a higher level the previous year than K11.

*A strict analysis of regression would use raw scores and examine ascents from low scores as well as descents from high scores. But since we are using standard scores, we would learn little new from examining ascents.

SUMMARY

Overall, the trained schools showed higher averages on all three tests—Communication-during-Emotion, Openness-to-Information, and Responsiveness—than untrained schools, and that was true in every year (Table 5-2). The effect of training seemed, on the average, to be greatest on Communication-during-Emotion (test A), less on Openness-to-Information (test B), and least on Responsiveness (test C), as we had predicted. When tests A and B were both high, pooling trained and untrained schools, Responsiveness (test C) was higher than when either or both of tests A and B were low.

The multidimensional analysis divided the elementary schools in Keele in every year into two clusters: those higher on test A and B (the AB cluster), and those higher on test B (the BA cluster). In the BA cluster, in every year, the trained schools showed *less* skill in Responsiveness than the untrained schools. The lesson seems to be, if you want OD training to affect responsiveness to colleagues, bring communication during emotion and openness to information to levels well above the ordinary, to be sure that communication during emotion stays particularly high. The findings with tests A, B, and C were corroborated by the analysis of tests D, E, and F.

There was evidence that trained schools maintained their skills in responsiveness longer than untrained. The school that received the most training resisted the general tendency to slip back better than any other school. We shall present more data about the effects of different amounts of training in the next chapter.

Chapter 6

Effects of Training and Collaborative Structure on Communication

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In this chapter, we focus again on communicative skill and ask two questions: (1) if organizational structure in a school is altered to a pattern that presumably demands closer communication, will staff members develop new communicative skill to match the structural demand? and (2) do different amounts of OD training make a difference in the degree of communicative skill a school acquires?

Several schools in each of the districts—Keele, Abington, and Findlay—adopted, at one time or another, an arrangement for collaboration among teachers that was more or less what people call team teaching. That fact gave us the opportunity to test a popular hypothesis; namely, if an organizational structure is undertaken that seems to demand new communicative skill, then staff members will develop the new skill on their own, without any training. As we shall see, our data give evidence that school staffs that undertook collaborative structures did indeed show heightened skill for a year or so after taking on the new structure, compared to schools

without that collaborative structure. After two years, however, the effect waned. In contrast, the effects of OD training on communication were even stronger after two years than they were earlier.

In this chapter, as in Chapter 5, we shall see that there are circumstances under which OD training can do more harm than good; the harmful circumstance that will show up in the data of this chapter is that of too little training. Finally, we shall examine effects of training and of collaborative structure on communication at two levels of skill: the first, interpersonal, and the second, group. The story we tell here is essentially a condensation of the substudy carried out by Wyant (1974).

MARSHALLING THE DATA

The unit of analysis in this chapter is again the individual elementary school as represented by the collective response of staff members to questionnaire items. In this chapter, however, we use data from elementary schools in all three districts, not only those in Keele. The three districts had a total of 40 elementary schools in 1970 and 42 in 1972. We chose to use in this substudy only those schools (a) for which we had data in both 1970 and 1972, or (b) those that began operating between the 1970 and 1972 data collections (the latter included two schools in Keele and one in Abington). The collection of schools studied in this chapter, then, totalled 27 in 1970 and 30 in 1972. This substudy is limited to data from 1970 and 1972; the most substantial block of training for school staffs—nearly three-quarters of the total hours—occurred between the 1970 and 1972 data collections.*

Collaborative Structure

The first independent variable whose effects we shall examine is that of type of organizational structure. We classified each school as "collaborative" (employing team teaching, multiunit, or differentiated staffing arrangements) or "non-collaborative" (employing self-contained classrooms). Our prediction was that collaborative schools would score higher on tests of communicative skill than non-collaborative schools.

The criteria for classifying schools as collaborative or non-collaborative came from a checklist of features of the multiunit school developed by Packard and Carlson (1971). Those features—derived from the multiunit model developed by the Wisconsin Research and Development Center—include: (a) a strong leadership team or "Improvement of Instruction Committee," (b) a sharply differentiated unit leader position, and (c) stable, well defined teaching teams to which all instructional personnel are assigned. Wyant obtained the information concerning those criteria through interviews with school and district personnel (for details, see Wyant, 1974). In no school were all the criteria fully satisfied, but all the schools we classify here as collaborative exhibited the essential character-

*For sizes of schools, rates and return, and so on, see Wyant (1974).

istics in some form, and there were clear differences between those schools classified as collaborative and those classified as non-collaborative.*

Among the thirteen elementary schools of the Keele district that were included in the study in 1970, Wyant found that four had collaborative structure; he found one among the six schools included from Abington and three among the eight schools included from Findlay. In 1972, he found six collaborative schools among fifteen in Keele, four among seven schools in Abington, and five among eight schools in Findlay.

Indicators of Communicative Skill

As indicators of communicative skill in the schools—the dependent variables—we used cluster of items from the questionnaires. We assigned weights to the possible answers and summed the answers across items. In other words, the clusters of items served as multi-item tests in the same way as the tests we described in Chapter 5. In this chapter, we shall present the results from three of the tests Wyant used.†

Chapter 4 lists all the items in the three tests and shows their manner of scoring. All the items concerned face-to-face communication. All of them posed situations in which the respondent could easily imagine his or her participation—or in which the respondent had indeed participated. And again, like the items in tests A through F, the items did not ask respondents to describe their own behavior, but the behavior or likely behavior of school staff as a whole in particular situations. Except for items 1, 4, and 5 in test G, all items asked respondents about typical behavior in the staff meetings they attended.‡ All the items dealt with face-to-face, oral communication—the very bedrock, in our view, upon which day-to-day operation, coordination or lack of it, and success or failure in the school rest.

*The Assistant Superintendent for Elementary Education in Keele told us that his district was "the first in the Northwest to use team teaching in the lower elementary grade curriculum" in the spring of 1968. In 1968 or 1969, all of the elementary schools in Keele attempted some form of collaborative arrangements for instruction, and most elementary schools did likewise in Abington and Findlay. We saw news in the local newspaper that two of Keele's elementary schools had been remodelled in 1968-69 to remove partitions between rooms. The same Assistant Superintendent told us that Keele was only "a year or two behind neighboring districts" in building open-concept schools.

†Wyant used six tests, three of which were available only in 1972. We report here the results only from the three tests available both in 1970 and 1972, because their results are easier to interpret. The tests we label here G, H, and I are those Wyant, in Document 111 107, labelled Ia, IIa, and IIIa.

Wyant selected the items he wanted to examine by the following procedure: a review of all questionnaire items produced approximately 50 directly related to communication processes. Those 50 items were then divided into three clusters on a prima facie test of appropriateness. Each cluster was then subjected to a "first principal component" factor analysis. On the basis of that analysis, the six tests were selected. For a more complete description of the selection, coding, and analysis of each item and test, see Wyant (1974).

‡We borrowed all the items about meetings from a questionnaire by M. B. Miles. For a description of the questionnaire, see Miles (1973). The questionnaire itself can be obtained from ERIC; order number ED 042 266. It is reprinted on pages 238-240 of the *Second Handbook*.

Test G: Third test of Communication-during-Emotion. As can be seen in the display of the six items of this test in Chapter 4, test G elicited the respondent's estimates of colleagues' behavior in situations that call for open communication, such as making public one's personal pain or critical opinions or intervening in an argument between two staff members. All items pictured communication infused with some emotion. Clearly, this test was an indicator of the first-level, interpersonal communicative skill.

Test H: Procedures in meetings. In this test, the respondent reported how frequently or infrequently procedures used in staff meetings helped or hindered the exchange of information in meetings—procedures such as discussing alternative solutions to a problem, making sure contributions came from more than a few members, monitoring to be sure the group stuck to the topic, and so on. The test contained seven items.

This test seems best described as reflecting a group skill; that is, a second-level skill resting on norms at faculty meetings that enable information to be brought out clearly, resources of members to be used, and so on. It corresponds directly to the skill of using "improved procedues at meetings" that we deescribed as a second-level skill in Chapter 3.

Test I: Effectiveness-in-meetings. This test had more to do with the way people in a meeting dealt with the task than with the way they dealt with one another. More than did test H, it dealt with norms that directly help to move problem solving along. Like test H, however, it sampled an interpersonal skill that could be brought into play only if most or all members of a group joined in its exercise. For example, among the thirteen items in the test, item 28 asked whether the nature of a problem was thoroughly discussed, item 29 whether answers were proposed before the problem was understood, item 31 whether decisions were left vague, and item 37 whether people felt very committed to carrying out the solutions arrived at by the group.

Because Test I, like Test H, sampled a kind of skill that could only be exhibited through the dynamics of a group, we classified it, too, as an indicator of a second-level skill.

We calculated scores for schools the same way we did in Chapter 5. The first step was to give weights to the possible answers to each item; the weights are shown in Chatper 4. The next step was to caluculate, for each item, its mean and standard deviation over all the elementary schools in the district in the given year. Using those statistics, each individual in each school was given the corresponding *standard score* on each item. Third, the mean of those scores was calculated over all items in the test and all respondents in the school. The result was substantially a *standard score for the school*; that is the score we shall be discussing during the rest of this chapter.

COLLABORATIVE STRUCTURE HAD A WEAK AND FADING EFFECT

Taking the standard school scores on each of three tests of communicative skill and calculating the mean scores for collaborative schools and non-

collaborative schools, and making that comparison both in 1970 and 1972, we found some weak effects in the predicted direction—that collaborative structure brought about heightened communicative skill, at least temporarily. The means are shown in Table 6-1.

Table 6-1

Mean standard scores of collaborative and non-collaborative elementary schools in three districts on three tests of communicative skill administered in two years

Year	Collaborative or non-collaborative schools	Tests G	H	I
1970	Collaborative (8 schools)	.26	.05	.15
	Non-collaborative (19 schools)	−.09	.00	−.03
1972	Collaborative (15 schools)	.07	.01	.00
	Non-collaborative (15 schools)	−.07	.00	−.02

Table 6-1 displays six partially independent tests* of the hypothesis. In every one of the six comparisons, the collaborative schools exceeded the non-collaborative schools in communicative skill, but the effects were very weak. Furthermore, the effect of collaborative structure faded to almost nothing in 1972: to .07, .01, and zero.

Wyant found some additional detail in the data that strengthens our conclusion that the effect of collaborative structure on communication faded after a couple of years. There were four elementary schools in Abington and Findlay, never trained, that had collaborative structure in 1972 but did not have it in 1970. Those four schools showed, on the average, the increased evidence of communicative skill that we expected would come with collaborative structure. Their mean scores on every one of the three tests were higher in 1972 than in 1970. To contrast with them, there were four other schools in Abington and Findlay, also never trained, that had collaborative structure in both 1970 and 1972. They showed heightened skill in 1970 that faded by 1972. Their mean scores on every one of the three tests were lower in 1972 and than in 1970. One can speculate that the first struggles to put the collaborative structure in place produces some heightening of communicative skill during the first year, but that later routinization allows the skills to fade.

GREATER AMOUNTS OF TRAINING HAD GREATER EFFECT

The second independent variable in this substudy was whether the school staff had received OD training. By 1970, four Keele schools had

*The three tests G, H, and I were independent in the sense that no test item appeared in more than one test and in the sense that two years seems ample time for respondents' memories (of those respondents who were still there) of their 1970 answers to have faded to insignificance. The 1972 tests were only partially independent of the 1970 tests in the sense that many of the schools giving data in 1972 were schools that also gave data in 1970.

received training; by 1972, seven elementary schools in Keele and one in Abington had received training. Our prediction was that the trained schools would score higher on the communicative variables than would untrained schools.

As OD training goes, the interventions in Keele were relatively small; no school had more than four training events (three schools had only one each) and the average amount of training was just under 24 hours per school. In comparison, in another similar project CASEA provided 80 hours' training to a junior high school staff (see Schmuck and Runkel, 1970), and in yet another project six elementary schools each received an average of 90 hours of training and consultation over the course of a school year (see Schmuck, Murray, Schwartz, Smith, and M. Runkel, 1975). Nevertheless, as we have already seen in Chapter 5, the amounts of training given in the Keele project did have measurable effects. But we shall see in this section that larger amounts of training in Keele had very different effects from smaller amounts. Table 6-2 reviews the amounts of OD training given in Keele and Abington. The amounts are grouped in the table by the years relevant to the substudy being described in this chapter.

Table 6-2
Training events for elementary schools in two districts from 1968 to 1972

	1968-1970		1970-1972		Total	
School	Events	Hours	Events	Hours	Events	Hours
K12	2	18	2	28	4	46
K11	2	15	1	24	3	39
K14			2	27	2	27
K15			1	22	1	22
K13	1	10	1	5	2	15
K02			1	14	1	14
A11			1	14	1	14
K05	1	6	1	6	2	12

To rule out the different effects of collaborative and non-collaborative schools on communication, especially in 1970, and let the effects of training come out more clearly, we shall now examine only the collaborative schools.* Table 6-3 shows the means on tests G, H, and I of three groups of collaborative schools: those with greater amounts of training, those with lesser amounts, and those with none. The table gives the means for 1970 and again for 1972.

The thing that leaps to the eye from Table 6-3 is that the schools with 6 to 22 hours of training (lines 1, 3, and 6) showed *less* communcative skill than the schools that had no training at all (lines 2 and 5); the only exception was that of test I in 1970. But among schools with 27 to 46 hours of training (line 4), the means in that year all exceeded the means of the

*Could we have done so, we would also have examined communicative outcomes separately among the non-collaborative schools. But among non-collaborative schools, there was no trained school in 1970 and only one in 1972.

untrained schools. Too little training, in sum, depressed communicative skill, but enough training improved it.

We also see in the table the deterioration of the effects of collaborative structure, just as we did in Table 6-1, but here we see the pattern in more detail. Looking at the untrained schools (lines 2 and 5), we see that all three test scores went down between 1970 and 1972 (from .36 to .10 on test G, and so on). Similarly, looking at the schools with too little training (lines 3 and 6), we see again that scores on all three tests went down

Table 6-3

Mean standard scores of collaborative elementary schools in three districts on three tests on communicative skill in two years, categorized by amounts of training

	1970		
	Tests		
	G	H	I
1. Greater training (2 schools with 15 to 18 hours)	.28	−.10	.34
2. Untrained (4 schools with no hours)	.36	.21	.14
3. Lesser training (2 schools with 6 to 10 hours)	.04	−.12	−.01
	1972		
	Tests		
	G	H	I
4. Greater training (3 schools with 27 to 46 hours)	.26	.18	.40
5. Untrained (8 schools with no hours)	.10	.01	.02
6. Lesser training (4 schools with 12 to 22 hours)	−.11	−.13	−.18

(from .04 to −.11 on test G, and so on). But now we see that communicative skill in the schools with the greater amounts of training had more staying power. Comparing lines 1 and 4, we see that among the schools that received the greater amounts of training, scores went *up* on tests H and I, and decreased only slightly on test G. Indeed, the highest mean in the table (.40) appears among the schools with the most training (line 4, 1972, test I). In sum, there is evidence in the table that adequate amounts of training produced a higher score on communicative skill than any produced by collaborative structure alone. And still further, while scores of untrained collaborative schools and of those with lesser amounts of training *declined* between 1970 and 1972, the scores of schools with the greater amounts of training *increased* on two of the tests and declined only very slightly on the remaining test.

Those results give strong evidence against the hypothesis that an imposed structure will draw out the requisite communicative skills from a school staff, at least for very long. They also give good evidence that the OD training, when given in adequate amount, had effects that grew at least during the two years we had in which to study them.* None of the

*Further corroborative evidence appears in ED 111 107 and in Wyant (1974).

individual differences was statistically significant; but the strong patterning, conforming to prediction almost perfectly with every one of the three tests, seems to us persuasive.

It is possible to rearrange the data of Table 6-3 in a way that makes more clear the effects of moving from too little training to an adequate amount. Wyant divided trained collaborative schools into four categories:

schools with the lesser amounts of training in 1970; they had a mean of 8.0 hours.

schools with the lesser amounts of training in 1972; they had a mean of 15.8 hours.

schools with the greater amounts of training in 1970; they had a mean of 16.5 hours.

schools with the greater amounts of training in 1972; they had a mean of 37.3 hours.

Wyant subtracted the mean of collaborative schools with no training at all from the means of those four groups on tests G, H, and I, obtaining four deviations from the untrained but collaborative state. Those deviations from the untrained baseline are tabulated in Table 6-4 (see Wyant, 1974, for more detail, including graphs).

Table 6-4

Deviations of means of collaborative elementary schools having different amounts of training from the means of collaborative schools having no training

	Mean hours of training			
Test	8.0	15.8	16.5	37.3
G	−.15	−.20	.20	.38
H	−.33	−.14	−.31	.16
I	−.32	−.21	−.08	.17

Looking at the four columns of three deviations each in Table 6-4, it is easy to see that scores on all three tests were depressed (using the mean of untrained collaborative schools as a baseline) by the smaller amounts of training, but went into the positive or profit side of the ledger when amounts of training became adequate. And we see again that the test that required the least amount of training to show a profit was test G on Communication-during-Emotion. That was also the test most affected by imposing collaborative structure. Those outcomes with test G match our findings in the previous chapter with test A on Communication-during-Emotion. Since the two tests had some different items in them, and since the analysis in this chapter drew data from many schools not used in the previous chapter, the similar results in the two analyses increase our confidence in their reliability.

HOW DID THOSE EFFECTS COME ABOUT?

Why should a structural change that presses staff into more frequent, task-oriented communication produce only temporary improvement in

communicative skill? And why should small amounts of OD training produce deterioration in communicative skill?

Consider first a structure such as that required by team teaching. In contrast to the relatively autonomous mode of functioning to which most teachers become accustomed in self-contained classrooms, team teaching is a non-routine kind of functioning that requires much more communication about time schedules, shuffling of students, and the like. That is, this kind of structure introduced new uncertainties into the school that must be decided by active negotiation and problem solving rather than by reliance on customary or traditional agreements and understandings.

We might speculate that a structural innovation such as team teaching is often attractive because it holds out promise of satisfactions of the kind we described in Chapter 3. That promise leads people to take new risks to make the new structure work. Teachers confer and argue more than they did before. They make known their frustrations. They confront conflicts instead of hiding them. They hope that others will do the same. Their communication in the face of frustration and conflict and their hope that continued communication will make the new structure work show up on a test of Communication-during-Emotion and other tests of communicative skill. But, without training in coping productively with expressions of frustration, without training in solving interpersonal problems and conflicts, problems do not get solved, resentments continue, and sub-projects fail. The old, ordinary skills cannot cope with the new stresses. Teachers begin to feel they have paid too high a price in interpersonal pain for too little return in accomplishment. They confer less, argue less, and cease to confront conflicts. They avoid hurts by ceasing to communicate when emotion rises, and they now expect others to do the same; indeed, others are doing the same. Scores on tests of communicative skill fall.

The effects of too little training, we might speculate, are similar. The communication during a few hours of training, more open and more welcoming to emotion than the school ordinarily countenances, encourages staff to voice frustrations and conflicts they do not usually voice. But the training has been too brief to impart skill in dealing with the frustrations and conflicts that have been brought into the open. The staff turn against the open and emotional style of the "training," and scores on tests of communicative skill fall even lower than average; the staff shrink from the painful exposures of the feelings they made during the "training."

We can also speculate that larger amounts of training can have the same effect of too little training if the larger amounts remain limited to the first-level skills of directness and openness in interpersonal communication—if they fail to develop the second-level skills that enable the group to use the interpersonal concerns of members as part of the specifications for adequate problem solving. To put it simply, training can be more disruptive than helpful if it stays with talking about things and fails to deal with getting things done. In Chapter 1, we mentioned the high school in Keele that opened its doors in 1968. The faculty had attended a 16-day workshop that August. Apparently, the workshop developed open communication

and cohesiveness within departmental groups, but failed to develop task-oriented norms for work between groups. We speculate (though without quantitative data to offer here) that the later inability of the school to resolve its organizational problems was exacerbated by what we infer was the largely first-level nature of the training during the August workshop.*

SUMMARY

Comparing schools having collaborative structure with other schools, we saw that collaborative structure seemed to call forth a small increase in in communicative skill within the year when the collaborative structure was put in place or in the year following That was true for all three skills: communication during emotion, procedures in meetings, and effectiveness of meetings. Two years later, however, the small increases had sunk back almost to nothing.

Examing collaborative schools only, we looked at the effects of OD training. We found that greater amounts of training had effects on communicative skill that were very different from the effects of small amounts. Schools with greater amounts of training had about the same amount of of skill (in relation to other schools in the district) from 1970 to 1972 on communication during emotion and actually increased their scores on procedures in meetings and effectiveness of meetings.

We also found, among schools with collaborative structure, that though enough training increased communicative skill on all three tests, too little training actually depressed scores on all three tests below those of schools with no training at all. The point of passing from a loss to a profit seemed to occur at about 16 hours of training in the case of communication during emotion and at about 24 hours for procedures in meetings and effectiveness of meetings.

Finally, the pattern of the shift from loss to profit seemed to corroborate the evidence in Chapter 5 that the skill of communication during emotion could be improved with lesser amounts of training than other skills.

The data from two different substudies—those of this chapter and the one previous—have fallen together in ways that make sense. We shall see other convergences as we go along. Nevertheless, our results should be taken as tentative until more data are available. The data on amounts of training rest on a very crude measure—a sheer count of hours. If the "better" training had been separated from the "poorer," or if the content of the training had been different, the pattern of results might have been different.

On the favorable side, the beneficial results attributable to the interventions provide some confirmation of the theory and technology of OD as a strategy for facilitating change in schools. The findings on the effects of organizational structure and the effects of amounts of training provide useful guides to consultant and client when planning the scope and extent of an intervention.

*Chapter 2 of Document ED 111 107 contains a few pages narrating our work with that school--K32.

Chapter 7

Effects on Collaborative Decision Making

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In the previous two chapters, we have examined the effects of OD training on skill at the first and second levels. In Chapter 8, we shall look at the ability of schools to put several kinds of innovations into place, some of which require third-level skills. In this chapter, we look at some further second-level skills. We begin with a few paragraphs about their importance.

SECOND-LEVEL SKILLS AND NORMS

Many organizational tasks in schools require strong cooperative interdependence within work groups, as we noted in Capter 3. We say that a group is a subsystem when it is performing work different from the work of other groups and when the work requires considerably more frequent and detailed communication among members of the group than with persons elsewhere—in brief, when there is more interdependence among members of the group than between them and person elsewhere.

The subsystem concept is a vital one for OD practitioners. If a consultant hopes to bring about lasting change in the organization as a whole, he or she must, at some point, stabilize the new way of doing things in the subsystems that will be doing the work. For example, when a consultant helps

a school to modify its decision-making procedures so as to increase the influence of teachers on matters usually decided by administrators, the consultant has to support modified internal processes not only in subsystems of teachers, but also within the administrative subsystems. The consultant then has to help the two kinds of subsystem establish effective coordination between themselves. From our perspective, the subsystem is the most critical unit of structure with which the consultant works.

In Chapter 3 we listed the following second-level skills as being important for subsystem functioning:

1. Clarifying communication
2. Agreeing upon goals
3. Uncovering conflicts
4. Improving procedures in meetings
5. Solving problems in groups
6. Making decisions in groups
7. Assessing progress

We found ourselves at the end of the project with responses to a host of questionnaire items written when we had less clarity about subsystems than we had later. We evaluated and grouped the various items on hand, selecting those we believed would be the best indicators of the second-level skills we wanted to assess. It turned out that we did not have any items to assess a subsystem's ability to uncover conflict, and we had fewer than four years of data on some other second-level skills.

Among the questionnaire items that were administered in all four years, we found two sets we believed relevant to the first skill listed above—clarifying communication. We also found two sets relevant to the sixth —making decisions. Those four sets of items provided the data for the greater part of this chapter.

CLARIFYING COMMUNICATION AND MAKING DECISIONS: FOUR TESTS

Test J: Awareness of Functioning Communication Channels

Test J consisted of a two-part questionnaire item that provided information on the accuracy with which a school's staff could identify functioning communication links in the school. Item 41 was displayed in Chapter 4, along with an explanation of its scoring. Briefly, we asked respondents to name as many as six other staff members with whom the respondent talked regularly about important matters, and then, among those, to name the pairs who talked or did not talk with each other. After that, we ascertained from the responses of the people in those named pairs whether they themselves reported that they did indeed talk with each other. The respondent could guess correctly in two ways: that the pair did talk, or that the pair did not talk. The respondent's score was the number of correct guesses she or he made. Test J, therefore, was an indicator of accuracy or awareness of communication channels in which the respondent was embedded. The score for the school was the mean of the scores of the individuals. For brevity, we shall hereafter refer to Test J as *Awareness-of-Channels*.

Test J tells us the extent to which members of a school know the paths through which ideas about important matters can be effectively sent or received, and paths through which they cannot. This skill goes beyond the first-level communicative skill of communicating effectively face-to-face. It moves toward understanding the "communicative map" within one's own subsystem and beyond it.

Test J tells us about the communicative network closest to each individual respondent. We did not, as we might have done, give all respondents the same list of names and ask the respondent to tell us the pairs among them who communicated. Instead, we asked each respondent to name those with whom he or she was in closest touch about important matters, and then asked the respondent to tell us about *those* persons. The result is that the indicator tells us about communication among persons with whom the respondent was very well acquainted. Considering that fact, we were surprised to discover that the average staff member in untrained schools could correctly identify only about one-half a communicative link among the persons with whom he or she communicated most.* We shall return to that statistic later.

Test K: Communicating with Interdependent Others when Choosing Teaching Methods

Test K consisted of the single questionnaire item 42 (Part B)—see Chapter 4. The item asked respondents to name others with whom they consulted or communicated in some way when choosing teaching methods. The score was simply the number of persons named. The positions of persons most often named were principal, reading or curriculum specialist, and the like, rather than other teachers. Test K indicated second-level skill, because it showed teachers communicating and collaborating through the role structure of school and district, not merely with arbitrary individuals. Some coordination across subsystems was implicit in most responses. Test K indicated the use of more formal channels than did test J. For brevity, we shall refer to test K as *Communicating-with-Interdependent-Others*.

*We derived the school's score by tabulating the number of "correct guesses" about existing communicative links. We therefore expect Test J to be primarily an indicator of the staff's awareness of some of the actual communication channels in the school. However, if the two parts of item 41 were highly correlated, that would tell us that Test J was primarily an indicator of the *amount* of communication in the school, not an indicator of accuracy. But in fact, the average rank-order correlation between the two parts of item 41 was only .23. That value was low enough for us to infer that Test J is *primarily* an indicator of the staff's *awareness* of the communication links in the school. We performed a separate analysis to ascertain the proportion of right guesses about pairs of other persons who did indeed talk with each other versus right guesses about pairs who did not talk with each other. In general, the right guesses were comprised of more guesses about pairs who *did* talk than about pairs who did not, though not overwhelmingly. Some disproportion is to be expected from the fact that the first part of the item allowed respondents to name only six persons. In sum, Test J indicates *accuracy* or *awareness* both about talking pairs and non-talking pairs; it is not merely an indicator of the number of persons to whom the respondent talked. Item 6, used in Chapter 5, is the indicator of the latter.

Test L: Decision Making by Teachers Concerning Curriculum and Student Conduct

Test L contained two items (see Chapter 4). Item 43 asked who *actually* plans and develops the school curriculum, and item 44 asked who *actually* develops regulations for student conduct. The favorable answer to both was "a group of teachers." Test L indicated collaborative decision making by teachers on two frequently recurring, important matters in schools.

We chose test L as a second-level criterion because, according to our theory, decisions are most effectively made when they are made as close to the operating level as possible. Our reasoning is that decisions about curriculum and student conduct will be carried out with more commitment and with better coordination when they are made by teachers or with a large degree of voluntary participation from them. That reasoning is not directly tested in our data; we mention it here to explain our choice of test L as an outcome variable. For brevity, we shall hereafter refer to test L as *Decision-Making-by-Teachers*.

Test M: Reaching Out to Colleagues in Decision Making

Test M contained three items (see Chapter 4). Item 45 asked the respondents to name others whose support, if the respondent wanted to propose an idea to the faculty, would be most helpful in obtaining faculty approval. The number of persons named went into the score on test M. Items 46 and 47 asked who determined teaching methods. The favorable answer to items 46 was:

> The final choice of teaching methods is left to me, but there are others whose job includes making recommendations or suggestions.

and the favorable answer to item 47 was:

> As a member of a group or committee, I share with others the job of deciding the teaching methods to be used.

For brevity, we shall hereafter refer to test M as *Collegial-Decision-Making*.

Tests K and M both asked about the same topic of teachers' concern: choosing teaching methods. Test K merely obtained a count of the number of persons with whom the respondent talked for any reason or in any way about choosing teaching methods, and those persons were not usually other teachers. The thread through the three items of test M was that of using regularized, recurring links through which to influence others to be influenced by them in decision making. We took test M, too, to be an indicator of skill at the second level.

In summary, test J told us the accuracy with which respondents in a school perceived communication links near to them. Test K told us the number of others from whom teachers obtained consultation about teaching methods. Test M told us the proportion of faculty who chose to join with others when dealing with decisions, especially concerning teaching methods, but also concerning any new idea. Test L told us the proportion

of faculty who joined in collaborative decision making concerning two important matters: curriculum and student conduct. We shall see that OD training increased scores on all four tests.

OUTCOMES

Training Improved All Four Skills

Let us look first at the overall differences between trained and untrained schools. The mean standard scores on four tests over three assessments are shown in Table 7-1. We see there that trained schools achieved higher scores in ten of the twelve comparisons. The two exceptions were in 1969, when there were only two trained schools and when they had less training than several schools were to acquire later. The effects were strong on three tests in 1970 and on all four tests in 1972. In addition to the effects of training we saw in previous chapters, we now see that the OD training also affected two second-level skills connected with keeping communication clear in the school: test J on awareness of functioning communication channels and test K on communicating with interdependent others when choosing teaching methods. It also affected two second-level skills connected with decision making: test L on decision making by teachers concerning curriculum and student conduct and test M on reaching out to colleagues in decision making.

Table 7-1
Mean standard scores of elementary schools in Keele on Awarenes-of-Channels (test J), Communicating-with-Interdependent-Others (test K), Decision-Making-by-Teachers (test L), and Collegial-Decision-Making (test M)

Year of data	Schools	Test J Mean score	p*	Test K Mean score	p*	Test L Mean score	p*	Test M Mean score	p*
1969	Trained: 05, 11	1.08		−.13		.33		−.04	
			<.04		NS		NS		NS
	Untrained: the other ten schools	−.22		.03		−.07		.01	
1970	Trained: 05, 11, 12, 13	.30		.95		1.22		.54	
			NS		<.006		<.001		<.08
	Untrained: the other nine schools	−.13		−.42		−.54		−.24	
1972	Trained: 02, 05, 11, 12, 13, 14, 15	.63		.83		.67		.41	
			<.01		<.001		<.005		<.07
	Untrained: the other eight schools	−.55		−.73		−.59		−.36	

*Probability that the trained schools could have scored differently from the untrained merely by chance, calculated by the t-test. "NS" means not statistically significant; that is, that particular difference had a good probability of occurring merely by chance.

More Training Helped More

We saw in earlier chapters that a sufficient amount of training had a greater effect on the skills than small amounts of training. That result can be seen among the data of this chapter also. Table 7-2 makes it easy to see.

In every comparison in Table 7-2, the schools with the greater amounts of training showed the highest mean scores. And the difference between the highest mean and the lowest was large in every one of the eight comparisons (four tests in each of two years).

Table 7-2

Mean standard scores of three groups of elementary schools in Keele in 1970 and 1972: those with greater amounts of training, those with lesser amounts, and those with none on tests J, K, L, and M.

	Test J	Test K	Test L	Test M
1970				
Schools with greater training: K11, K12	1.48	1.58	1.89	1.79
Schools with lesser training: K05, K13	—.89	.32	.55	—.70
Schools with no training: K01, K02, K03, K04, K06, K07, K08, K09, K10	—.13	—.42	—.54	—.24
1972				
Schools with greater training: K11 K12, K14	1.53	1.52	1.42	.87
Schools with lesser training: K02, K05, K13, K15	—.04	.31	.12	.07
Schools with no training: K01, K03, K04, K06, K07, K08, K09, K10	—.55	—.73	—.59	—.36

In Chapter 6, we saw that too little training actually depressed the scores on tests of communicative skill below the levels of schools with no training at all. Here, among data on second-level skills going somewhat beyond sheer communication skill and more toward committed action, we see a similar depression only in 1970, and then only on two tests: J and M. In all of the other six comparisons, the lowest means were those of the untrained schools.

To recapituate, we saw first that in 1970 and 1972, training seemed to have favorable effects on all four of the tests. Though three of the eight comparisons in those years shown in Table 7-1 did not reach stringent levels of statistical significance, the direction of the differences was the same in all eight comparisons. The repetition of outcome over four tests and two years, with new schools entering in 1972, makes our confidence in the outcome all the greater. We then saw in Table 7-2 that greater amounts of training had a great deal more effect on the skills than smaller amounts.

We also analyzed the data by using nonmetric multidimensional scaling, but the analysis turned up no new information.

Accuracy About Communicative Links Was Low

We also looked at the *raw* scores on test J—Awareness-of-Channels. The raw score was easily interpretable. It was a simple count of the number of communicative links about which the respondent was accurate. We described the method of the count early in this chapter when we described test J. The score for a school was the mean accuracy of the staff members. Table 7-3 shows the mean raw scores of elementary schools in Keele on test J.

In the lowest-scoring schools in every year, respondents were actually *more often wrong than right*, on the average, about whether communicative links were active among those persons with whom they themselves were in closest communication! Though we have observed very poor communication in schools, those figures nevertheless surprised us. It is no wonder that staff in many schools are often wrong about the extent to which information or attitude is shared.

Among the highest-scoring schools (they were trained schools in the years when there were trained schools), the average accuracy did not reach two links in three of the years, and it did not reach three in 1972. The scores on test J in the Abington and Finday districts were about the same range as those in Keele.* Low though those scores may be in absolute numbers, however, they seem to be adequate to support considerable degrees of second-level and third-level skill in a few of the schools, especially in K12, as we shall see in the next two chapters.

Table 7-3

Raw scores of elementary schools in Keele on awareness of functioning communication channels (Test J)—that is, mean number of communication links, or absence of them, correctly identified by school staff

	1968	1969	1970	1972
Highest school's score	0.80 (K06)*	1.56 (K11)	1.38 (K12)	2.77 (K11)
Mean of trained schools	None	0.73	0.75	1.27
Mean of untrained schools	0.20	−0.06	0.53	0.46
Lowest school's score	−0.30 (K09)	−1.24 (K09)	−0.10 (K01)	−0.33 (K10)

*Label of school is in parentheses.

Work Orientation of Communication Channels Was Low

The 1972 questionnaire contained an item that enabled us to look at still another slice of the communication in the Keele elementary schools. The first part of item 48 (see Chapter 4) in 1972 made use of the same question that we have already described as the first part of test J—the part that asked the respondent to name others with whom he or she talked seriously at least once a week about important matters. The second part asked the respondent to name others "whose jobs are so closely related to yours that you believe the two jobs *must* be performed collaboratively if

*See Table 8-2b in Chapter 8 of Document ED 111 107.

either of you is to perform his or her work effectively." The score was the number of persons named in *both* parts of the question, and the score for the school was the average number of those matched namings. Maximum score was six, because the item offered only six spaces in which to write names. But actual scores rarely came close to six.

Table 7-4 shows the *raw* scores on item 48 of the schools scoring highest and lowest in 1972. It also shows the mean row scores for trained and untrained schools.* As we expected, trained schools reported more communication links to vitally necessary collaborators than did untrained schools.

Table 7-4

Raw score of selected Keele elementary schools on overlap of communication with task-interdpendence (item 48) in 1972

School	Raw Score
Highest school, K15*	1.35
K11* and K12*	1.32
Mean of trained schools	0.89
Mean of untrained schools	0.35
K05* and K09	0.24
Lowest school, K08	0.11

*trained school

We were again surprised by the small average numbers of links—in this case the numbers of serious communicative links to vital colabroation.† Despite our years of consulting with school staffs about communication difficulties and witnessing the shivering loneliness of many teachers, we were apparently still not ready to believe that the perceived and actual links in the Keele elementary schools would be so few.

SUMMARY

In 1970 and 1972, trained schools showed greater second-level skill, on the average, than untrained in both years on four tests: awareness of functioning communication channels (J), communicating with interdependent others when choosing teaching methods (K), decision making by teachers concerning curriculum and student conduct (L), and reaching out to collelagues in decision making (M). The schools with the most training generally showed the highest scores, and those with the least training often showed very low scores. We were gratified to find that the training had clear effects on the more complex second-level skills that we

*Appendix 8-D of Document ED 111 107 gives scores for the other eight elementary schools in Keele and means of the three districts.

†The data of Tables 7-2 and 7-4 are not independent. The first stage of obtaining the data for the two tables made use of the same question in the questionnaire. It is not surprising that the two tables show similar patterns. The information about *numbers* of links, however, is useful.

have described in this chapter, skills that directly affect collaborative work and decision making among staff.

When we asked respondents to tell us the pairs of person who were linked in communication, asking them only about persons with whom they themselves said *they* were in communication, we were surprised at the low average level of accuracy. In 1968 in Keele, staff in elementary schools were only barely more often right than wrong about pairs who were or were not in frequent and serious communication. In 1972, on the average, staff even in the trained schools correctly identified only slightly more than one communicative link among their colleagues. In the school with the highest accuracy, the average accuracy did not reach as high as three links. In every year, staff in some schools were more often wrong than right in guessing who among their colleagues were in frequent and serious communication (Table 7-3).

Finally, we ascertained in different parts of the 1972 questionnaire those persons with whom the respondent talked seriously at least once a week about important matters and those persons with whom the respondent believed collaboration was necessary if either of the two jobs were to be done effectively. The overlap was low. In the highest-scoring school (a trained school), only about one and one-third of the average respondent's communicative links included others whose collaboration was vital to doing the job effectively. In the lowest -scoring school (an untrained school), the average respondent reported an overlap of about a tenth of a link.

The evidence accumulates that skills of the sort we have been examining in this book could be very much higher than they typically are in schools, and that OD training could help to raise them.

Chapter 8

How Do Schools Cope with Innovations?

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We shall present data in this chapter that support two chief conclusions. First, the elementary schools in our study usually meandered from one kind of innovation to another (including periods without innovation) in cycles of one or two years. Team teaching and similar collaborative innovations were most popular in Keele in 1969 and in Abington in 1970.

Second, training and consultation in organizational development seemed to give an important amount of help to schools to deal expeditiously with the social pressure to adopt team teaching and similar innovations. We had data from thirteen schools in Keele at two or more times and could therefore estimate, for those schools, the rates at which they changed the amount of attention they were giving to different types of innovation. Of the thirteen, four had received training; all four dealt with team teaching with dispatch, comparatively speaking. Of the nine untrained schools, only two dealt with that kind of innovation with dispatch.

We checked on the occurrence of team teaching by direct inquiry on site, but the information that enabled us to compare the relative amounts of attention given to different kinds of innovation came through a single questionnaire item (item 48 in Chapter 4):

> How about recent changes that could have useful effects on your school? Have there been any innovations, any new ways of doing things, that began during the last year or two that you think could have helpful effects in the school?

We intended the answers to that question to tell us how innovation was viewed inside the school—to indicate the subjective experience of innovation on the part of teachers-and-others.* We did not intend the answers to bring us a simple, objective count of innovative schools such as the count of collaborative schools obtained by Wyant (described in Chapter 6). We deliberately sought the subjective reality, not the "objective" reality. We wanted to learn something about the attention and energy people in the schools gave to work that was out of the ordinary. The constructively adaptive school deals effectively with non-routine and unusual events. But part of the school's adaptive skill lies in the way it chooses events to consider non-routine or unusual. When we ask how a school copes with innovation, the first thing we ask is: what kind of thing does the school treat as an innovation; that is, as something new and noteworthy? Whether an outsider would call a thing an innovation is often beside the point. People in schools cope with what *they* see, not with what "disinterested observers" see.

We used our questionnaire item to ascertain the awareness or beliefs among the elementary school staffs about the different sorts of "new" and "useful" things going on in their schools. Obviously, the responses contained a mixture of what respondents experienced themselves and what they heard about from others.

What percentage of a school staff should we expect to report an innovation? The answer depends first upon the type of innovation going on. Some innovations require direct attention from only a few people, and their results may not seem notably innovative to those not involved. Examples are new methods of bookeeping or of managing finances, changes in facilities or equipment, or sending individuals off to summer school or an institute to upgrade some skill. We should not expect very large percentages of staff to report that kind of innovation. We called that kind of innovation "cloistered," to indicate an activity going on in one part of the school and not easily visible to persons elsewhere.

Some innovations, however, seem to impinge on most staff and to be easily visible. Examples are changes in organizational structure or role such as the addition of a person in a new kind of job, reallocations of duties in several parts of the school, or the extension of planning functions to many persons not previously involved. Other examples are those requiring increased collaborations in classrooms, such as team teaching, differentiated staffing, and the "open-concept" school. Many curricular changes, too, are widely visible; some require increased coordination among teachers. If one of the more visible innovations were occurring, and if it were involv-

*Teachers-and-others included teachers, counselors, librarians, and others having direct contact with students, but it excluded administrators, secretaries, custodians, cooks, bus drivers, and any part-time persons spending less than half time at the school.

ing the large numbers of staff it was intended to invlove, we should expect a large majority of the staff to report it.

We took the percentages of staff reporting an innovation to be a rough indicator of the amount of energy going into it. It takes a considerable amount of attention and energy to mount an innovation that will significantly affect the way a school as a whole does things. We reasoned that if only a few staff members were sufficiently involved in an innovation to think of reporting it, even that much aware of it, then the innovation was not "occurring" in the sense of having significant or widespread influence on the behavior of staff in the school.

We shall see in this chapter school after school in which not more than thirty percent of the staff said that a useful innovation of a particular sort had been going on in their school. Percentages that small or smaller showed up frequently even though the questionnaire was given in the spring of the year (thus allowing time for new members to become familiar with the school), even though the question asked for anything "that began during the last year or two" (thus allowing latitude for memories), and even though the question gave room for respondents to write not only the innovation most salient in their minds, but three other things as well. Surely, a "useful innovation" that did not come to the minds of (say) two-thirds of a staff when given that sort of opportunity to mention it was not having much of a focused or commonly understood impact on the school as whole. Of course, as we said earlier, a minor percentage of a staff might report an innovation when only that minor percentage was engaged in it and their efforts had not reached the awareness of others.

FIVE KINDS OF INNOVATION

The five categories of innovation we worked out are described below. To order the great variety of responses, we reasoned that it is more difficult to acquire the complex skills needed to bring about changes in a whole school's way of doing things than to acquire those needed to effect changes in one subsystem. Similarly, more complex and difficult skills are necessary to bring about changes in a subsystem than to alter functions carried out only by one or two people.

A: Structural Innovation

The first category of response to the questionnaire item contains those changes in the schol's way of working that we thought would usually put the greatest amount of stress on the organizational fabric. Included are (1) changes that required reallocations of duties in several parts of the school, (2) changes in interpersonal roles that were usually perceived by the role-takers as increases or decreases in power or status, (3) changes in duties that presumably challenged persons' conceptions of their professional egos, (4) changes that required checking by several persons whether a program was achieving its claimed purpose (and thus possibly challenging the competence of many), (5) changes that produced more two-way

communication, and (6) changes that communicated stressful matters more often in groups than privtely one-to-one. Into this category we brought together reports of institutionalized group problem-solving, rearrangements of power, evaluations of programs, Management-by-Objectives, Program Planning and Budgeting, S-T-P problem solving, organizational development when named as such, and new school-wide norms for communication, as well as reports of new organizational structures such as a formal "leadership team."

Structural changes of that sort seem to us clearly to require the third-level organization skill. They seem to us more difficult to bring about than other sorts.

B: Collaboration in the Classroom

Sometimes less stressful than structural changes are some of the new practices that affect fewer parts of the school—perhaps only a single cluster of teachers. This category of change carries considerable stress with it, however, because such innovations require at least some of the staff to change their expectations toward one another. The prime example was team teaching. Another was the new kind of interaction between teacher and students engendered by teaching the teacher the Flanders methods of interaction analysis.

C: Curricular Innovation

We put into this category all sorts of packaged curricula and other ways of managing instruction: new math, remedial reading, new schedules, inquiry training, ability grouping, clustering grade levels, testing or screening students, and the like. Sometimes, of course, successful curricular innovation requires as much collaboration among teachers as some of the arrangements we included under B-innovatons. Neverthless, in reading the responses to our question, it seemed to us that most of the arrangements for managing curricula mentioned did not call for as much collaboration as those we classified as B-innovations.

D: Cloistered Innovation

Here we put changes that took place away from the ken of most teachers: new methods of bookkeeping or managing finances, changes in buildings or equipment, or sending individuals off to training to upgrade their skills. We also tossed into this category a few miscellany, very rare.

N: Nothing

For comparison, we included the category of no innovation at all. Here we counted those respondents who wrote "nothing" or who gave no answer to the question. Presumably, at least in most instances, "nothing" was the easiest "kind of innovation" to carry out.

By counting the number of reports of each of the above types of innovation and converting to percentages, each school could be characterized by a string of percentages, each cumulated over the four possible opportunities

to answer. For example, the cumulated percentages of reports of innovations in school K01 in Keele in 1968 were:

Letter label	Word label	Cumulated percentage
N	Nothing	59
B	Collaboration in the classroom	50
C	Curricula	14
D	Cloistered	14
A	Structural	9

The school can be characterized by the string of category-letters alone. In this chapter, we shall sometimes use ordered strings of letters—such as NB(CD)A from the list just above—to indicate the categories of innovations in a school from most frequently to least frequently mentioned; parentheses indicate that the categories enclosed in them were tied in their percentages.

MEANDERING

When a school or district undertakes a change in organizational functioning of serious scope—one that requires change in the norms governing role relationships—the change will not come about easily or quickly. A year is too short a time in which to expect most such changes to be brought to a new stability. Two or three years is more reasonable. The accumulated evidence for those statements is now too large to ignore.* How long did the elementary schools in our study persevere at one kind of innovation? We cannot answer that question for Findlay, because we did not collect data from enough schools in that district at each data collection. In Keele and Abington, however, we found that the typical school meandered from one kind of innovation to another every year or two.

Salient Innovations

One way to see the meandering from one kind of innovation to another is to look at the kind of innovation each school reported as most salient—

*It would serve no purpose to list all the conceivably relevant literature here. The following writings amply portray the time, energy, and difficulty entailed in organizational change in schools; together they also provide an indication of rate of success, which is not high: Anderson and Lake (1974), Bassin, Gross, and Newton (1977), Bentzen and Associates (1974), Berman and McLaughlin (1975), Center for New Schools (1975), Charters and Pellegrin (1972), Derr (1970), Doll, Love, and Levine (1973), Duffin, Falusi, and Lawrence (1972), Favors (1971), Gentry and Watkins (1974), Goodlad (1975), Goodson and Hagstrom (1971), Jones (1973), Keutzer, Fosmire, and Diller (1971), Lake and Callahan (1971), Langmeyer, Lansky, and Reddy (1973), Louis (1977), Mann (1976), Packard (1973), Pellegrin (1969), P. Runkel and R. Schmuck (in press), Sarason (1971), P. Schmuck, Paddock, and Packard (1977), R. Schmuck, Murray, Smith, Schwartz, and M. Runkel (1975), R. Schmuck and P. Runkel (1970), Sieber, Louis, and Metzger (1972), Smith and Keith (1971), Tye and Novotney (1975), Wacaster (1973), and Whitmore, Crist and Marx (1974). Similar evidence about work in social service agencies has been given by Glaser and Taylor (1973) and about international technical assistance by Hammond and Todd (1975).

most readily recalled by staff—in each year. Table 8-1 shows the data for Keele. The letters in the table have the meaning we explained earlier. For school K12 in 1969, for example, the table shows the string of letters B(CD)AN. That means that staff of K12 gave the greatest cumulative percentage of their reports in 1969 to collaborative innovations such as team teaching (B), next to curricular (C) and cloistered innovations (D),

Table 8-1

Rank order of cumulative percentages of reports of five kinds of innovation among elementary schools in Keele

School number	1968	1969	1970	1972	B-score
K12	did not exist	B(CD)AN	(AB)(CN)D*	ADCNB*	3
K11	did not exist	BCDNA*	BCDNA	CANBD*	1
K14	did not exist	did not exist	did not exist	NCBDA*	1
K15	did not exist	did not exist	did not exist	N(ABD)C*	3
K05	BCNDA	B(CD)NA*	BNCDA	NCBAD*	1
K13	did not exist	did not exist	CBADN*	NACBD*	0
K02	(BD)(CN)A	(ACN)BD	CNBAD	CB(AN)D*	0
K03	BDNCA	B(DN)CA	BNCDA	CNDBA	0
K10	BNCDA	BNDCA	ABC(DN)	CABND	0
K04	BNCDA	CDBNA	CD(BN)A	C(AD)BN	0
K03	NC(BD)A	B(CD)NA	CD(BN)A	NB(CD)A	0
K07	NCDBA	BCAND	CBNAD	NCDAB	0
K06	NCBDA	BNDCA	NBCDA	CBADN	0
K09	NBCDA	BND(CA)	(ND)(BC)A	NCBAD	0
K01	NB(CD)A	B(ACN)D	NC(AB)D	NA(BCD)	0

*This school received OD training between this questionnaire-administration and the previous one.

next to structural innovations (A), and the least percentage to "nothing." The last column of the table will be explained in a later section.

To get an indication of the time during which one kind of innovation was salient for a school, let us look at the kind that was receiving the greatest attention from the staff—that is, the kind listed first in the string of letters. Table 8-1 tells us that among the 15 schools, there were four in which the majority of the staff reported the same kind of innovation in first place over three consecutive administrations of our questionnaires: schools K05 and K08 reported collaborations (B) as being most salient in 1968, '69, and '70; and schools K02 and K04 reported curricular innovations (C) as most salient (or tied for most salient) in 1969, '70, and '72. Schools K12, K11, and K10 reported one kind of innovation over two consecutive times. Six schools showed a different innovation salient in every year: K13, K03, K07, K06, K09, and K01. Two schools could not give us information on this point, because they gave data only in one year: K14 and K15. To recapitulate, of the 13 schools that gave data in two or more

years, nine changed their most salient kind of innovation every year or two. Particular projects may have changed more often than that. The pattern in Abington was similar.

The popularity of collaborative innovations (B) such as team teaching in Keele in 1969 is easily seen in Table 8-1. In 1968, B-innovations were most salient (or tied for most salient) in five out of the ten schools then existing. In 1969, B-innovations were most salient in ten of twelve; in 1970, in four of thirteen; in 1972, in none of fifteen. The rise and fall was similar in Abington, though the peak came in 1970 rather than in 1969.

If a large percentage of reports from a school describe something like team teaching going on in one year, but then in a later year the largest percentage of reports describe some other kind of innovation, what does that mean? It could mean that team teaching had been installed smoothly and had become routine, so that it was no longer considered a "new thing" The drop in percentage might also mean that the effort to install team teaching was unsuccessful, and the school had given up the effort, no longer perceiving it to be something that "could have helpful effects in school." For example, we know from other evidence that school K12 had successfully established team teaching by 1972, when that kind of innovation (B) shows as least salient for that school in Table 8-1. We also know that school K08, in contrast, did not successfully establish team teaching by 1972 (when it shows next to last in salience), despite the fact that B-Innovations had been most salient for the staff from 1968 to 1970.

We shall discuss the matter of success again in the section on the effects on training. Our point here is that most elementary schools in our study shifted their greatest attention every year or two to a new sort of innovation. Few stayed with one sort of innovation for as long as three consecutive administrations of our questionnaires.

Our experience as consultants leads us to believe that most school people expect organizational change to be brought about too quickly and too easily. The meandering among types of innovations that we saw in Keele and Abington seems to bear out the judgment. Most schools do not stick with a new organizational form long enough to give it a fair chance to work. One year is not a fair chance. Two, three, or four years could be. Of course, there are two dangers. The first danger is that of wasting energy and resources by giving up an effort too soon, when a longer effort would bring the new thing to fruition. The other danger is that of wasting energy and resources by carrying on an effort too long, when in fact conditions in the school or district are not right to support the particular kind of innovation. We hope this study of organizational change in Keele and its neighboring districts, along with other studies we mention, can help school people and their consultants to lessen the risk of both kinds of danger.

Patterns of Innovation

We can find another way to look at meandering among innovations by making use of the same nometric multidimensional scaling that we used in Chapter 5. We gave the computer the cumulative percentages that each

school reported for the five kinds of innovation in each year and asked it to compute the correlations between schools over the five cumulative-percentage figures. Each correlation was an index of similarity between two schools. For each school in each year, the computer then gave us a distinctiveness index.* A low index meant that the school's priorities of attention among the five kinds of innovation were very similar to the priorities given by other schools. A high index meant that the school's priorities were very distinctive—that its rank ordering of reports of innovations was very different from those of other schools. When a school's distinctiveness index changed, it was changing the degree to which it "went along" with the other schools in its district. Our earlier indicator of meandering (Table 8-1) told us whether a school stuck with a particular kind of innovation. The distinctiveness index tells us whether a school was sticking with what the other elementary schools in the district were doing, even though the kinds of innovation most and least favored might be changing from year to year. The first indicator can be called an absolute index, the second a relative index. Both are useful ways of looking at meandering.

Figure 8-1 shows the distinctivenes indices graphically for the elementary schools existing in Keele in each of the four years when we administered questionnaires.† The four scales in the figure have been stretched or compressed so that the range for each year occupies the same number of inches on the paper. The school at the left of each scale was most similar in its innovative pattern to other elementary schools in the district and had the lowest distinctiveness index. The school at the right was least similar and had the highest distinctiveness index. The zigzag lines are there to aid the eye in tracing the movements of schools from one year to another.

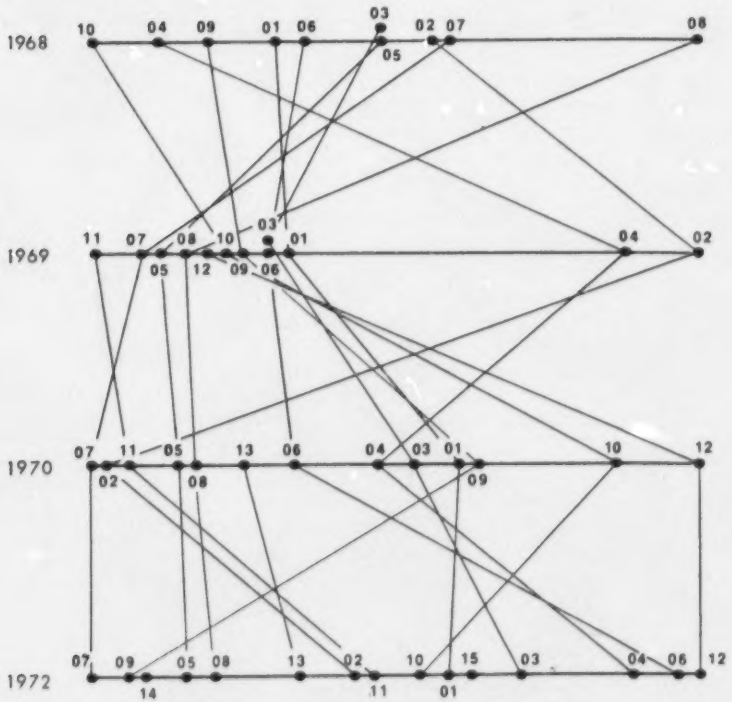
It is easy to see in Figure 8-1 that very few schools held the same relative position very long. The typical behavior of schools was to shift back and forth from year to year. The meandering was especially marked on the part of those schools that reached a very distinctive position at one time or another. Looking at the right-hand end of the scales, we see instances of schools that flew out to that end, or back in from that end, or both: K08, K04, K02, K10, and K06. On the whole, the pattern is what we would expect of a cloud of gnats. Different gnats would be near center and at the edge at different times; exchange of position would be especially frequent at the edge of the cloud. The only exception to quick oscillation at the edge was school K12; that school alone maintained its exceptionally distinctive position at two consecutive data collections.

The analysis graphed in Figure 8-1 distinguishes schools whose attention to innovation had a pattern different from the trend in the district as a whole. It shows us that the meandering of schools was not merely a conformity to the main direction of innovation in the district. Even when we compared innovative patterns of schools to the average patterns in the

*Actually, the MINISSA program calls this index a "centrality" index, but it is equally easy to look at it from the complementary point of view and call it a distinctiveness index.

†The actual numbers are shown in Table 10-5 of Document ED 111 107.

Figure 8-1
Comparative distinctivenes of elementary schools in Keele in reporting five kinds of innovation.



Numbered dots represent positions of schools along the distinctiveness scale. On the scale for each year, the school at the left is most central or typical in its ordering of attention to types of innovation as indicated by reports of staff. The school at the right is most distinctive.

district in each year, Figure 8-1 shows us that the typical school went from somewhere close to the average to something different and then back again.

We should remember that distinctiveness is not necessarily the same thing as innovation. Schools K01 and K09 were fairly distinctive in 1970 because, unlike other schools, their greatest cumulative percentage reported an *absence* of innovation. The especialy difficult thing is to achieve *innovation* that is distinctive from other schools; the exemplar in our study was K12.

In summary, despite the months and years serious organizational change requires, and almost regardless of whether the schools in Keele and Abington succeeded in bringing about collaborative and structural changes in one, two, or three years, most schools meandered from one kind of innovation

to another every one or two years, much as gnats shift, with seeming randomness, from place to place in their swarm.

EFFECTS OF TRAINING

Perhaps elementary schools in Keele and Abington moved from one kind of innovation to another because they had successfully accomplished the one kind and were ready for the next. On the basis of experience elsewhere, we have argued that that was in most cases unlikely. But we also have independent evidence of the success of team teaching in these schools. We present it in this section.

The Assistant Superintendent for Elementary Education told us that Keele was "the first in the Northwest to use team teaching in the lower elementary grade curriculum" in the spring of 1968. In 1968 or 1969, all of the elementary schools in Keele attempted some form of collaborative arrangement for instruction, and most elementary schools did likewise in Abington and Findlay. Following negotiations between the Keele Education Association and the district administration, instructional aides had been added to some primary classrooms in the fall of 1968. The local newspaper told us that school K03 had been remodelled to include two rooms without partitions in 1968-69, and K05 was extensively remodelled in the same year to remove interior walls to facilitate team teaching in two of its four wings. The Assistant Superintendent for Elementary Education told us that Keele was only "a year or two behind neighboring districts" in building open-concept schools. There can be no doubt that elementary schools in Keele, and presumably those in Abington and Findlay, were making serious efforts during the years of our study to bring about collaborative (B) changes. But what was their rate of success?

In Chapter 6, we classified eight of 27 schools as exhibiting colaborative structure in 1970 and 15 of 30 in 1972. The rates of success in achieving collaborative structure that we gave in Chapter 6, however, were based on a rather undemanding criterion. In this section, we shall use a more stringent criterion, and we shall find that the rates of success were very much lower than we at first expected.

Salient Innovations

Table 8-1 shows with asterisks the elementary schools in Keele that had received OD training and consultation. It also shows the success of the schools in achieving team teaching by 1972 in the column headed "B-score."

In September of 1973, Spencer Wyant of CASEA visited the Keele and Abington districts to gather evidence of the extent to which collaboration among teachers had been present in elementary schools at the time of the April 1972 administration of questionnaires. He used a three-stage winnowing procedure, starting with a central-office administrator, then visiting each principal, and ending with interviews of one or two teachers in the schools. Three of his final questions, taken together as a test, dis-

criminated clearly among schools. If all Wyant's interviewees in a school said "yes" to one of the questions we classified the school as having "said yes" to that question, otherwise "no." The three questions (paraphrased) were:

1. Do teaching teams meet at least weekly?
2. Does a leadership team exist?
3. Does the leadership team meet at least weekly?

This three-item test requires not only that teams and leadership positions existed, but that teams and leaders actually functioned on a regular schedule. We assigned to each school a "B-score" equal to the number of the three questions that the school answered "yes."* Here are the 1972 B-scores for the schools in this study:

School	B-score	School	B-score
K12	3	K14	1
K15	3	A04	1
A11	2	A06	1
K05	1	A10	1
K11	1	All others	0

The above list tells us that of the 32 elementary schools in Keele and Abington, most of which had tried some sort of collaborative innovation similar to team teaching before 1972 (all of those in Keele did so), 14 had teaching teams in 1972 that met at least weekly. Of the 14, one also had a leadership team that met less often than weekly, and two had leadership teams that met weekly or oftener. Among the 14, the schools that had received some training and consultation for OD before 1972 were K12, K15, A11, KO5, K11, and K14. Among the 18 schools with B-scores of zero (no teaching team meeting weekly), the trained schools were KO2 and K13.

Not all the elementary schools, of course, made a serious effort to establish team teaching. Let us accept two kinds of evidence that a school did so. One kind of evidence is a B-score of at least one, meaning that Wyant found all team leaders agreeing that teaching teams met at least weekly. (For example, Table 8-1 shows that in April of 1972, the most frequent report in school K14 was that no innovation had recently been going on. But the school first opened its doors in September of 1970, and had a B-score of 1 in April of 1972. Therefore, it must have devoted a serious effort to establishing teaching teams during some period before April of 1972.) The other kind of evidence we shall accept is the report by staff in at least one year that B-innovation was in first rank in their awareness, in the manner shown for Keele in Table 8-1. We shall not accept B-innovation at any lesser rank as sufficient evidence. Fourteen elementary schools in Keele and nine in Abington satisfied one of those criteria or both, making a total of 23. The distribution of training across B-score among the 23 is

*No school answered yes to the third question unless it had answered yes to the second, and none answered yes to the second unless it had answered yes to the first.

shown below; six of seven trained schools were successful in establishing team teaching, but hardly one-quarter of the untrained.*

	B-score of zero	B-score greater than zero
Trained schools	1	6
Untrained schools	13	3

The table will have more meaning if we examine some of the schools individually. In the first year of school K12's existence, 1968-69, B-innovation was most salient for its staff. In the next year, A-innovation (structural) and B-innovation shared first place in the staff's attention. Two years after that, A-innovation was still most salient in the reports of the staff, but the percentage telling us that B-innovation ws "new and useful during the last two years" had dropped to zero.† Those changes are corroborated by the B-score based on Wyant's observations; by 1972, team teaching was well established and not likely to be reported as "new." K12 was the school that had received the greatest number of hours of training. School K11 showed a similar pattern and the corroboration was similar, though its B-score was not as stronge as K12's.

Both K12 and K15, and also A11 in Abington, opened their doors in the fall of 1970 after some OD training in August. By spring of 1972, they were showing some success with team teaching, and the greatest cumulative percentage of reports from the staffs said that nothing new had been going on, though there were also scattered report (more in K14 and A11 than in K15) that a variety of new things had been happening.

School K05 gave its greatest amount of salience to B-innovation in 1969; by 1972, the percentage was down to 14. By 1972, school K05 was showing some success in team teaching and 52 percent of K05's respondents said that nothing new had been happening during the previous two years. Those five schools in Keele (K12, K11, K14, K15, and K05) and the one in Abington (A11) provided us with examples of reported percentages that went down because the schools were consolidating successful B-innovation.

School K02 did not establish team teaching in the sense checked on by Wyant; indeed, B-innovation did not appear in first-place salience after 1968.

In sum, of the eight elementary schools that received OD training and consultation during the course of our study, seven made an effort to establish team teaching or something similar. Of the seven, six showed a reason-

*The distribution is statistically significant, with a probability of less than .01 that the result was merely chance (Fisher's exact test, one-tailed). But the computation of statistical significance has no great importance; the schools were not selected randomly from a listable population, nor were they randomly assigned to training.

†Numerical cumulative percentages are given in Appendix 10-B of Document ED 111 107.

sonable degree of successful practice of team teaching at the end of our data collection. All the other elementary schools in Keele and most in Abington reported B-innovation at greater salience than other kinds during one or more of our four data collections, but only three in Abington and none in Keele pased Wyant's first question about establishing team teaching. Clearly, the elementary schools with OD training and consultation established team teaching with much more frequent success than those without.

Cycling with Dispatch

When the staff of a school feels urged to undertake team teaching, it can either spend energy to undertake team teaching and make it work, or it can decide not to undertake it. With either choice, the school can act more decisively or less. It can "decide" to undertake team teaching, but then put too little energy into it to make it work. It can "decide" not to undertake it, but then continue to toy with the idea. In Keele, some elementary schools were decisive and some indecisive, relatively speaking.

Our intent in conducting organizational training has always been to heighten the self-renewing capacity of a school or district. That does not mean that our training should cause the school to take on more innovations per year than an untrained school. Nor does it mean that the trained school will obediently carry out more of the innovations brought to it by the central office or other outsiders. It does mean that the trained school will, we hope, make up its collective mind with greater dispatch. If the members of the school collectively commit themselves to an innovation, the school trained for self-renewal will then marshal more of its energy and other resources than will an untrained school, and it will apply them in more effective ways. If the members decide the innovation is not suitable for them, they will extricate themselves from it decisively and turn to other work.

During the years of our study, elementary schools in many parts of the nation were being urged to adopt new modes of organization: team teaching, differentiated staffing, the "open concept" school, Management-by-Objectives, Program Planning and Budgeting, and the like. In Keele, Abington, and Findlay, many elementary schools tried to bring about one or more of those changes in their organiaztion. Team teaching was an especially frequent choice.

Sometimes we have heard researchers or even school administrators urge a school or district to undertake an organizational innovation because, even if it should fail, "it can't do any harm." We disagree. Trying a new thing, especially a complex new thing that requires new interpersonal arrangements, is costly. Change always requires more energy than routine does. If a school spends energy beyond its budget for a year or two and then finds itself no better off than before, the costs are serious. First, the regular program will inevitably have suffered some neglect in the hope that the new thing would compensate. Second, the school will have lost what it might have gained had it chosen a more suitable innovation. And

third, the prognosis for any attempt at innovation in the near future will have worsened, since a "failure" always weakens confidence in the possible benefits of the next innovative effort. The amount of energy and enthusiasm that is nowadays draining away from teachers into aborted innovation is frightful.*

We hoped that the trained schools in Keele would waste less effort than schools usually do on their innovations. We hoped that the trained schools would marshal energy more productively and, therefore, that their cycles of investigating, evaluating, deciding, and acting would be shorter than average. School K05 was an example of relatively fast cycling: it showed the beginning of attention to team teaching with a cumulative percentage of 50 in 1968, leaping to 108 in 1969 as the staff bent their efforts to it, fell back to 49 in 1970, and sank to a residual 14 in 1972.† The corresponding percentages for one of the slower-cycling schools were 59, 72, 40, 35. The faster-cycling schools leapt quickly to higher points and fell quickly to lower points than did the slower-cycling schools. School K12 leapt higher than any other in salience of B- innovation: to 133 in 1969. And it fell to zero in 1972, a low point reported only by one other school.

We analyzed‡ speed of cycling and compared it with whether the school had received training. Because we had to compare rates of rising and falling, we could include only those thirteen schools that had been in our study at two or more times of assessment. The numbers of trained and untrained schools in Keele cycling faster and slower are shown below:¶

	Elementary schools in Keele	
	cycling more slowly	cycling more rapidly
Trained schools	0	4
Untrained schools	7	2

All of the trained schools dealt with B-innovation with dispatch, comparatively speaking, but only two of the nine untrained schools did so. Three of the trained schools (K05, K11, K12) dealt with B-innovation by successfully establishing team teaching; one (K13) dealt with it by deciding more speedily than most schools not to give it further attention. Of the nine untrained schools, two (K07, K08) also relinquished B-innovation rapidly. The remaining seven were less decisive; the highest cumulative percentage among them was only 77, with most peaks near

*Costs of that sort are discussed in more detail by Runkel, Schmuck, Arends, and Francisco (1979).

†Appendix E explains how a percentage could reach beyond 100. Briefly, a percentage should be read as a weighted indicator of the *relative* density, so to speak, of the perception of a particular kind of innovation in the school. A figure of 100 is merely a point on the scale, with no special distinction.

‡The method of analysis is given in connection with Figure 10-1 and Table 10-4 in Chapter 10 of Document ED 111 107.

¶The distribution is statistically significant, with a probability of randomness less than .05 by Fisher's exact test, one-tailed.

60, and the lowest percentage among them in 1972 was 14, with most near 30. Clearly, trained schools took action in regard to innovation of the collaborative sort with greater dispatch than the bulk of the untrained schools.

Our examination of the way the elementary schools in Keele and Abington dealt with collaborative (B) innovation has thrown the trained and untrained schools into stark contrast. Using a fairly exacting criterion of success, we saw earlier that the great bulk of trained schools showed objective signs of success and the great bulk of untrained schools did not. We have now just seen in Keele, where we had enough trained schools to make comparisons, that whether a school undertook to establish team teaching or to decline to do so, the school was far more likely to do either with expedition if it was a trained school.

Those findings seem to us economically very important. The trained schools dealt with B-innovations in one or two years, either achieving some success or ceasing to expend effort on them. The untrained schools, in the bulk, spent from one to three years either struggling unsuccessfully or giving an indecisive amount of attention to the innovations, meanwhile incurring the serious costs that we mentioned earlier. Yet the comparative successes of the trained schools, in contrast to the costly wasted efforts of most of the untrained, were bought at a cost of person-hours in OD training that must have been a minor fraction of the hours other schools wasted in unsuccessful struggling. It surprised us that such a strong effect could have resulted from the small amounts of training the elementary schools in Keele got, even granting the fact that some of them were especially ready to profit from training. If indeed that much profit can usually be gained from that much training—that is, profit in desired innovation achieved and unwanted innovation jettisoned—then that small amount of training is indeed a very good investment.

Structural Innovation

An inspection of Table 8-1 quickly reveals that few schools ever put structural innovation (A) at the forefront of their attention. Among those that did, the cumulative percentages reached not even half the largest percentages devoted to collaborative innovation (B). School K02 in 1969 gave cumulative percentages of 35 each to structural (A), curricular (C), and nothing (N). School K10 in 1970 gave 44 percent to structural innovation. School K12 gave 52 percent in 1970 and 41 percent in 1972. In Abington, only one school in one year ranked structural innovation first. Not only was attention to structural innovation small in comparison to collaborative (B) and curricular (C), but only one school (K12 in Keele) ranked it first more than once. That paucity of attention to structural innovation might be interpreted as evidence for our hypothesis that structural innovation is more difficult than other kinds. But we should walk cautiously toward that conclusion, because our instances are few, our districts only two, and our time-period may have had special, unknown influences in it. We hope other researchers will explore the question of difficulty.

In the meantime, we can pretty well rule out one alternative explanation for the relatively small attention to structural innovation. Some might argue there was so much social pressure to addopt team teaching during the years of the study that the schools simply had little energy left over for anything else. But Table 8-1 belies that argument. The table shows that first-ranked reports of curricular innovation (C) and no innovation (N) were frequent. Schools could have chosen structural innovation (A) instead of those. They didn't.

Nor was it true that team teaching or other B-innovation was touted to exclusion of other types. On the contrary, Keele mounted a campaign to promote Management-by-Objectives—an innovation we coded as structural when it was reported. The newspapers in Keele told us that 1968-69 was a big year for Management-by-Objectives. An outside consultant was hired to explain Management-by-Objectives to administrators. Supervisors heard about supervision by objectives, and teachers heard about teaching by objectives. During the next two years, the job of converting the district to Management-by-Objectives was taken over by an assistant superintendent, and that work was assigned highest priority among his duties; more than once, he described to us the series of seminars on this topic he was conducting in various sectors of the district.*

Despite the fact that the Keele district devoted considerable energy to promulgating Management-by-Objectives, that innovation and other structural innovations (A) showed up in answer to our question only rarely. If we assume that, given equal awareness of possible innovations and access to help in bringing them about, schools are more likely to put sustained energy into innovations they find to be easier than into those they find to be more difficult, then the contrast between the frequenceies with which schools in Keele essayed the A-type and B-type innovations lend some support to our hypothesis that the structural type is more difficult than the collaborative type.

SUMMARY

1. Serious innovations that call for changes in organizational structure or in role reciprocations, and many curricular innovations as well, require a great amount of extra effort from many people in a school, and the efforts must be maintained for a long time, usually two years or more, if the innovation is to become successfully institutionalized. Judging from the literature, the success rate among schools that attempt effortful innovation is not high. And the costs of failed innovation can be severe. Nevertheless, we found that the type of innovation most salient in the awareness of staff in the schols we studied changed, on the average, every year or two.

2. Training and consultation in organization development seemed to be of considerable aid to schools wanting to bring about greater collaboration among teachers such as that required by team teaching. Twenty-

*The campaign may have had some effect. Table 8-1 shows that in 1968 all ten schools put A-innovation in last-place salience, but in 1969 and 1970 only seven schools relegated it to last place, and in 1972 only three of fifteen put it there.

three elementary schools tried collaborative innovation. Of seven that received OD training, six showed objective indications of successful team teaching. Only about a quarter of those without training showed the same indications.

3. Some schools dealt with collaborative innovation with more dispatch than did others. Of four trained schools, all dealt with collaborative innovation with dispatch; of nine untrained schools, only two did so.

4. Finally, structural innovation appeared in first-rank salience only rarely, and that fact, along with some other evidence, makes us think that structural innovation was more difficult for the schools than other kinds. Nevertthless, school K12, the school with the most training, put structural innovation in first-rank salience at two consecutive data collections.

Chapter 9

Summary

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It seemed to us, in 1967, that life in schools could be more satisfying than it typically was. We believed that much of the work in schools was going wrong, having to be recycled or given up, because people were usually unclear with one another about how they would carry out their joint tasks and unclear, too, about the extent of their commitment to the tasks. Especially, school people rarely used an agreed-upon, clearly understood, systematic procedure for working on joint problems.

We believed we could teach school staffs some ways to communicate more clearly and a systematic group procedure for solving problems. Those new skills and procedures would reduce wasted effort, increase the proportion of successes, and thereby enhance feelings of achievement and power. Since the work would be done in groups, the satisfaction of affiliative motives would also increase. The improved satisfaction of motives, in turn, would increase the energy available for work on further problems.

In 1967, neither our theory nor our technology was much elaborated, but we did have some ideas and methods in hand that we thought could get us started. As it turned out, those ideas and methods served us well in the Keele project.

The theory laid out in Chapter 3 came later. The application of the subsystem concept, the notion of levels of skills, the notion of readiness

for change or for training, the notion of dealing with innovation as organizational stress, the conception of the need for special norms during the transition between the old and the new—those ideas and others took form in 1969 and later.

We began the Keele project with the hope that we could enhance the self-renewing capability of the Keele district and its schools. In addition, we hoped to learn a great deal about *how* to bring about self-renewing capacities in schools and districts. We achieved the latter purpose. We developed many concepts that have since helped us to design OD interventions more systematically and effectively; the proportion of intuition and sheer "art" in our projects, though still considerable, has gone down since the Keele project. We developed and codified many procedures that have enabled our later consultations to move more sure-footedly.

Our data-collection changed shape, too, as we went along. As we became more clearly aware of important variables, we wrote them into our questionnaires, at the same time dropping items we came to believe would give us less useful data. Chapter 4 displays the items that furnished data for this book. Changing the questionnaires from year to year lost us some comparisons we could have made over four years, but it gave us valuable data in later years that we could not otherwise have got. In addition to questionnaires, we used many documents and interviews to keep track of the doings of the Cadre of Organizational Specialists.

Our aid to the Keele district was not as great as we had hoped. A few of our interventions aborted, as did a few of those of the Cadre of Organizational Specialists, whom we trained in the summer of 1969. A number of our interventions in schools, as well as those of the Cadre, did show certain important, if limited, benefits. In one elementary school, the Cadre sufficiently clarified discontents so that a dozen teachers withdrew resignations they had submitted. In a few elementary schools, the Cadre's interventions (more than ours) enabled staffs to carry complex organizational innovations into stable and successful functioning. In those schools, levels of important organizational skills rose, as we have demonstrated in earlier chapters. Bigelow (1971) tells how our training enabled teachers in a junior high school to change their behavior toward students so that the students initiated more communication in the classroom. Our contributions to the organizational functioning of the two high schools, on the other hand, were uncertain and small at best. After the arrival of the new superintendent, the use of OD methods in the central office faded and vanished.

Despite our discontent with the extent and depth of the aid we were able to give, we think the data we have presented in this book, taken all in all, give clear evidence that the OD consultation was effective, especially where there was enough of it—that it had quantitatively demonstrable effects on several kinds of interpersonal and organizational skills.

Our best achievement in the Keele project was the establishment of the Cadre of Organizational Specialists. They carried on a great deal of consultation on organizational matters with schools, district departments, and groups outside the district. They carried on that work even during

extended periods when funding was low or non-existent. Because of their persistence, the obstacles they overcame, and the success of their work, their functioning was worth studying in itself.

ENTRY

Looking back, we probably would have done better in some schools had we entered more slowly, moving even more deliberately than we did to enable the staff to feel that they could reject us with no penalty, and working out a fully voluntary "contract." Though we are sure that some schools came to feel that they could re-negotiate with us as peers at any time, we are equally sure that other schools believed we carried a club lent to us by the central administration. At the same time, we believe that our entry was more deliberate, tentative, and gentle than that practiced by many consultants—certainly more painstaking than the entry of the consulting firm that preceded us.

We opened discussions with the superintendent and his cabinet in September of 1967. That cabinet wrote goals, and we wrote goals, too. The two sets of goals were discussed by the two parties in December of 1967. We met with all principals and also with representatives of the local education association (KEA) in mid-January of 1968, explaining our purpose and reiterating the freedom of our listeners to join the project or not to join it as they wished. In February, the school board voted to support the project financially (funds to support the CASEA people were being supplied by the U.S. Office of Education). In March, we interviewed 50 members of the district, both to gather diagnostic information and to show our faces to more people.

We wanted to try our hands in elementary, junior high, and senior high schools. We approached principals of five schools after getting advice from people in the central office. When entering each of the five schools, we explained our project again to the principal and then to the assembled staff. In some of the schools, we were able to hear some of the staff's own discussion of whether they wished to join our project. In others, we took the word of the principal about the decision of the staff. Later, we were sorry we had not carried out a more intensive exploration of schools on our own instead of relying as heavily as we did on diagnoses by central-office personnel. In our next project (see Schmuck, Murray, Schwartz, Smith, and M. Runkel, 1975), we did more careful preliminary exploration.

WORKING WITH SUBSYSTEMS

When we went into the Keele project, we were beginning to think in terms of subsystems. By subsystem, we meant a group of persons who had to work interdependently to carry out a particular function. To say it another way, we call a group a subsystem when it has a particular task to do, depends on all its members to get the task done, and is sufficiently autonomous in performing that task that much more communication about it goes on inside the group than between the group and persons outside it.

A group can have the features of a subsystem but still function well or poorly. It can use the resources of all its members or only those of a few. It can communicate effectively or ineffectively. Its members can collaborate synergistically, or they can compete to the detriment of the task. We believed our own work would be more effective if we selected groups with the subsystem character or groups that had the potential to acquire the subsystem character. Some possible candidates were schools, departments within secondary schools, the superintendent's cabinet, central-office departments, and the like.

We began work with (1) the superintendent and his cabinet, (2) the building representatives of the Keele Education Association, and (3) the principals. We were not sure that the KEA representatives or the principals would turn out to have the character of subsystems. We were ready to look for evidence for or against. We did hope that the superintendent's cabinet could soon achieve the character of a strong subsystem. The cabinet's members did often show signs of wanting to become a cohesive, productive unit. In the end, however, we failed to bring the cabinet to that status, for several reasons. First, we took most of our energies away from the cabinet in the fall of 1968 to devote them to work in schools. Had we stayed with the cabinet longer, we might have improved their coordination, mutual trust, and effectiveness as a deliberative, problem-solving, and decision-making body. Second, as in many district, nowadays, events in the community kept the cabinet rocking on its heels. It reacted by repeatedly shifting roles to cope with each emergency. That was understandable, even necessary, but it lessened our ability to help them establish a pattern of stable role-relationships. Third, the superintendent would never unambiguously turn over any decision to the cabinet as a body, despite their frequent and earnest pleas for him to do so. To form a cohesive and effective cabinet, it would not have been strictly necessary for the superintendent to have relinquished some of his decision-making prerogative, but his doing so would have speeded the process. In sum, though the cabinet showed the subsystem character of marshalling its members to work on specific tasks and communicating about them a great deal among themselves, it did not become a highly effective team during our work with it.

The KEA representatives never acted as a unitary system toward us, but individual members were very helpful to us at several times, as we recounted in Chatper 1 and 2. The principals, too, rarely acted as a unitary body. Both groups, we should mention, did upon occasion gather themselves together and act with strong unity to deal with threat unrelated to our project.

In all the elementary schools with which CASEA conducted consultation and training, we worked most of the time—and in some cases all of the time—with an entire staff gathered together. All the elementary staffs had the subsystem character to a considerable degree. Those are the schools that showed the very encouraging outcomes that we recounted in Chapters 5 through 8.

In the junior high school K23, we had to work mostly with teachers

who happened to have the same free period. We worked occassionally with a departmental group, also for brief periods. At the end of our work with K23, we did manage to bring together the entire staff for a full day's work on one Saturday. In all, we had no discernible effect on the functioning of the staff as a body, but we did have clear effects on the behavior of teachers in their classroooms; Bigelow (1971) has described that spill-over. We attribute the small organizational results in large part to the fact that we too rarely succeeded in bringing actual subsystems together in the same room.

We do not take space in this book to tell the story of our work in the two high schools; it is told in Chapter 2 of Document ED 111 107. Suffice it to say that work in both schools was difficult. There were some objective signs that we facilitated collaboration among the department heads in the older high school, but in neither school was there any discernible impact on the staff as a whole. In none of the secondary schools did we succeed in bringing together the right subsystems often enough.

Our clearest and most successful experiment with a subsystem was establishing the Cadre of Organizational Specialists. We took great care to clarify its functions, to teach it how to bring out the capabilities of all its members, and to maximize its abilities in communication, problem solving, and decision making. We included exercises and occasions to build its cohesivenes and esprit de corps. The Cadre did indeed develop into a distinct subsystem of great strength.

We gave the group its initial training in the summer of 1969. All the members of the Cadre worked part-time as organizational specialists, spending the bulk of their time in their regular jobs. Included at the outset were central-office administrators, teachers, counselors, principals, and assistant principals. The coordinator was assigned half-time. The Cadre subsequently carried out work of considerable variety with school staffs, administrative and other groups in the district, groups linking the school district and community, and groups outside the district. It repeatedly scrutinized its own functioning and took steps to improve itself. It replaced members and trained its new members. Facing financial crises and an unsympathetic new superintendent, it demonstrated for six years its strength, adaptability, and productivity. The results we displayed in Chapters 5 through 8 are more testimony to the Cadre's skills than to CASEA's.

In the case of the Cadre, we started with nothing and built the Cadre entire. The advantage of building a sybsystem where there was nothing before is that there are fewer things to undo. There are no animosities with long histories. There are no long-standing norms for ways of doing things in which people have vested interests. We succeeded in building the Cadre into a highly cohesive, well-coordinated, self-renewing group, and we helped it establish its necessary links with the rest of the district. It did work of high quality and showed remarkable stamina.

Our experience in Keele with hunting for subsystems or building them enabled us to act more surely in our next project, in which we aided six elementary schools to establish team teaching. We cannot take space

here for that story; we must refer the reader to Schmuck, Murray, Smith, Schwartz, and M. Runkel (1975). In 1971, we established another cadre in another Northwest city. It is still thriving at this writing under the leadership of its third full-time coordinator. Still other cadres are now operating in California, Colorado, Florida, New York, and Oregon.

We turn now to a review of the outcomes of the training and consultation as indicated by our questionnaire data. We gave the details in Chapters 5 through 8. A brief tabulation of the variables on which we gave data in earlier chapters appears as Table 9-1. That table serves as an index to the effects of OD training that we have described in this book.

Table 9-1

List of variables (except training) with postulated level of skill and chapter where discussed

Level of skill	Chapter	Name and symbol of test
1: Interpersonal	5	Communication-during-Emotion (A and D)
	6	Communication-during-Emotion (G)
	5	Openness-to-Information (B and E)
1 or 2: Nearly subsystem	5	Responsiveness (C and F)
	5	Persistence of Responsiveness (C)
2: Subsystem (group with school)	6	Procedures-in-Meetings (H)
	6	Effectiveness-by-Teachers (I)
	7	Awareness-of-Channels (J)
	7	Communicating-with-Interdependent-Others (K)
	7	Decision-Making-by-Teachers (L)
	7	Collegial-Decision-Making (M)
	7	Work orientation of communication channels
Varies	8	Type of innovation salient
3: System (school)	6	Collaborative structure
	8	Meandering among innovations
	8	Distinctiveness of innovative pattern
	8	Cycling innovations with dispatch
	8	Achieving team teaching
	8	Achieving structural innovation
3: System (Cadre)	See Chapter 2.	

EFFECTS ON THE SKILLS

The consultation and training conducted in elementary schools by CASEA and the Cadre seemed to have numerous favorable effects. The repeated patterns in the results give us confidence that the differences we saw in the data between trained and untrained schools resulted in considerable degree from the training, and little from sheer happenstance (we say more about the matter in Appendix B). We summarize below the effects of the OD training and some other matters that we described in Chapters 5 through 8.

Effects of Training

Trained elementary schools showed higher averages than untrained schools in 1969, 1970, and 1972 on the first-level skills of (1) continuing to communicate under emotion and (2) openness-to-information—the ability of a school staff to elicit, offer, and circulate information in the school. A third skill, responsiveness to requests from other teachers, we judged to be somewhat more than a first-level skill, leaning into the second level. Trained schools also did better on that skill than untrained schools. The findings concerning those three skills were corroborated by the data from a second set of three tests. Furthermore, there was some evidence that the trained schools maintained those three skills longer than the untrained schools. (See Chapter 5.)

Trained schools showed higher averages than untrained schools in 1970 and 1972 on the second-level skills of (1) awareness of functioning communication channels, (2) communicating with interdependent others when choosing teaching methods, (3) decision making by teachers concerning currriculum and student conduct, and (4) reaching out to colleagues in decision making. (See Chapter 7.)

A far greater proportion of the trained elementary schools in Keele and Abington succeeeded (to our criterion) in bringing about team teaching than untrained schools. But whether or not schools succeeded in bringing about team teaching or some similar collaborative innovation, the trained schools dealt with that sort of innovation with greater dispatch than untrained schools—either getting the innovation into working shape or jettisoning it more rapidly. (See Chapter 8.)

Greater amounts of training showed greater favorable effects. Among elementary schools with collaborative structure (chiefly team teaching), the schools with greater amounts of training maintained about the same level from 1970 to 1972 in the first-level skill of communicating during emotion (while most untrained schools declined in skill), and increased their scores on second-level skill in the processes of meetings and on second-level skill in conducting effective meetings. Too little training, however, seemed to depress the scores of schools on those three skills. The change from loss to profit seemed to occur for communicating during emotion at about 16 hours of training and at about 24 hours for processes in meetings and effectivenes in meetings. (See Chapter 6.)

We also found that schools with the greater amounts of training generally showed the highest scores on the second-level skills of awareness of functioning communication channels, communicating with interdependent others, decision making by teachers, and reaching out to colleagues in decision making. Those with the least training, in contrast, often showed very low scores on those four skills. (See Chapter 7.)

There seemed to be some facilitation of responsiveness to requests from other teachers when, regardless of whether the school had training, the school was above the district's median on communicating during emotion and on openness to information. Schools' scores on responsiveness were

lower when they fell below the median either on communication during emotion or on openness, or on both. (See Chapter 5.)

There seemed to be a facilitating effect from those same two variables on the *effect that training had* on a school's skill in responsiveness. Among trained elementary schools in Keeele having high scores on communicating during emotion—even higher than their scores on openness to information —the average score on responsivenes was well above the mean of untrained schools having the same pattern on the first two skills. But among trained schools having the reverse pattern—higher scores on openness than on communicating during emotion—their average was *below* the average of the corresponding untrained schools. That pattern was corroborated in an analysis with a second set of tests of the same three skills. (See Chapter 5.)

In almost all our analyses of data, one elementary school repeatedly stood out. K12 began life at half its intended size in 1968-69, as a "guest" of another school in an older building. Its principal had become attracted to our work; he was one of the first members of the Cadre of Organizational Specialists. His school was to open at full strength in the fall of 1969. He negotiated with a team of the new-born Cadre to carry out OD training with his staff just before the opening of school. The school obtained further OD training in December 1969, August 1970, and January 1972. Those periods totalled 46 hours, the largest number of any school in this study.

The responsiveness of school K12 went up after training to the exceptionally high standard score of 2.80 in 1970. Its score on responsiveness then declined only a little, remaining the highest in the district in 1972. (See Chapter 5.) School K12 showed exceptionally high standard scores also on the tests of communcating during emotion, procedures in meetings, and effectiveness in meetings. In 1972, its score on every one of those three tests was the highest of the elementary schools in Keele. (See Chapter 5.)

On awareness of channels, the accuracy with which staff described the communication nets in which they were embedded, school K12 scored highest of the elementary schools in Keele in 1970, though not in 1972. On decision making by teachers, school K12 was second highest in 1970 and 1972, with standard scores of 2.10 and 2.16, respectively. The schools that exceeded K12 were different in the two years; they did not maintain their high scores. K12 also stood out in the degree to which its communication channels carried important task-oriented information. Its score in 1972 on work-orientation of communication channels was second from the top at 1.32; the highest school's was 1.35. (See Chapter 7.)

K12 was one of two schools in Keele and its neighboring two districts to show thorough attainment of team teaching. It cycled its innovation of team teaching with more dispatch than any other elementary school in Keele. It was the only school in Keele to show the highest distinctiveness of innovation pattern at two consecutive data-collections. In particular, it was the only school to show structural innovation at highest salience at two consecutive data-collections. (See Chapter 8.) Document ED 111 107 shows several other indicators on which K12 was outstanding.

No other elementary school in the study showed repeatedly such out-

standingly high indicators of organizational effectiveness and self-renewing capability. We are sure that the principal's enthusiasm and competence magnified greatly the effect of the OD training.* The fact that the school was a new one at the time of training, however, probably had little to do with its success. We reported data in Document ED 111 107 that showed no advantage accruing to new schools in Keele on our indicators. We attribute K12's qualities to the principal's leadership and to the OD training.

Third-Level Skill

In Chapter 3, we spoke of third-level skill as the constructive adaptability of the organization as a whole—the school, the district, the department, or whatever organization one chooses to consider. We did not assess third-level skill by any tests made up of questionnaire items, as we did the first-level and second-level skills. But we believe we can point to some things some of the schools actually did that are the sort of things it takes a fair amount of skill in constructive adaptability to do.

Instituting a strong organizational change such as team teaching, it seems to us, usually requires the skills we listed in Chapter 3 as constituting constructive adaptability: skill at instituting problem-solving episodes as needed, skill at maintaining acccess to fresh ideas and other personal resources, skill at turning from talk to action, and skill at assessing movement. We have no direct assessment of any of those particular skills. It seems to us that a fairly high level of those skills is necessary if a school is to bring about a strong change such as undertaking team teaching and making it work. To put it simply, we believe that installing and maintaining team teaching successfully is one of the kinds of capabilities we have in mind when we speak of constructive adaptability.

The criterion we used in Chapter 8 for "success" in establishing team teaching (or similar collaborative structure) was not a very strong one, though it was stronger than the one we used in Chapter 6. But whatever its stringency, we found (when we looked at the 23 schools that had made some effort to put team teaching into place) that six out of seven of the schools with OD training attained it, but only three out of sixteen schools without training did so. That is one bit of evidence—though indirect and limited to one kind of accomplishment—that training helped schools reach toward constructive adaptability.

K12, the school we described above, is the exemplar. In 1978, an informant from Keele told us she had several times encountered the principal of K12 "wandering around the district" looking for something to occupy his time. The principal told her that he got bored at his school, because it was pretty much running itself.

The clearest example in the project of using OD training to bring about third-level skill is, of course, the Cadre of Organizational Specialists itself.

*A later study by Bell (1977) has helped us to understand the influence of the principal on organizational functioning.

We told its story in Chapter 2. It met a series of severe challenges to its existence, but through them all, for six years, went on recruiting and training new members, expanding the skills of its members, and working for clients. The Cadre received much more training and consultation than any of the schools in the project.

Levels

One of our hypotheses was that first-level skills would be easier to acquire than second-level, and second-level easire than third-level. The evidence we were able to muster was sparse, and several analyses not reported here gave no evidence one way or the other. We did find, however, that training had a greater effect on communication during emotion (first-level skill) than on responsiveness (a skill beyond first level). (See Chapter 5.) We also found that communication during emotion could be improved with somewhat fewer hours of training than the second-level skills of processes in meetings and effectiveness in meetings. (See chapter 6.) Finally, a high level of communication during emotion seemed to facilitate the effect of training on responsiveness. (See Chapter 5.)

OTHER FINDINGS

We assessed the accuracy with which respondents were able to pick out pairs of people who communicated frequently and pairs who did not among persons with whom they themselves communicated frequently. In every year, we found that there were some schools in which staff were more often wrong than right, on the average, in their estimates. In 1972, in the school with the highest accuracy, the average accuracy did not reach as high as three links. (See Chapter 7.)

We asked respondents to name others whose jobs had to be done well if they themselves were to do their own jobs well, and compared those named in answer to that question with those the respondent named when asked to name persons with whom the respondent communicated at least once a week about important matters. The overlap was generally low. In the highest-scoring school in 1972, only about one-and-one-third of the average respondent's communication links included others whose collaboration was vital to the respondent's job. (See Chapter 7.)

Many elementary schools in Keele and Abington undertook innovations of several sorts, but few stayed with them long enough to give them a fair chance of working. In most schools, the innovation most salient in the minds of the respondents changed every year or two. (See Chapter 8.)

Sometimes we hear it said that teachers will call forth new communicative skills from themselves if a new organization arrangement demands it. We found that collaborative structure such as team teaching put in place without training in communication or other organizational process did call forth a small increase in the skills of communication during emotion, processes in meetings, and effectiveness in meetings in the year the new structure was undertaken or in the year after that, but then it faded. Two years later there was virtually no sign of the increase. (See Chapter 6.)

RECOMMENDATIONS

1. If you want to improve the kind of skills, in a school, that we have listed in this chapter, there is fair evidence that OD training and consultation will do it. Attention should be paid, however, to the readiness of the school. We have not dealt with readiness in this book; see the *Second Handbook*, p. 48 ff.

2. If you want to bring about strong organizational change such as team teaching, there is fair evidence that OD training and consultation will help. For further evidence, see Schmuck, Murray, Smith, Schwartz, and M. Runkel (1975). Don't expect good intentions, resolution, or sheer effort alone to bring the necessary collaborative skills into being; the evidence is against it.

3. More training has more effect. See Schmuck, Murray, Smith, Schwartz, and M. Runkel (1975) for the effects of greater amounts of training than were given to any of the schools in the Keele project. Probably no OD project has yet been mounted in schools in which the amount of training was so great as to reach the point of diminishing returns. Given average readiness, do not expect even the simplest of communicative skills to improve before about sixteen hours of training. Skills at the next level will probably not improve before about two dozen hours.

4. If you want to maintain ready access in your district to OD training and consultation, a cadre of organizational specialists is an excellent way to do it. Chapter 12 of the *Second Handbook* tells how to organize one.

THE CADRE OF ORGANIZATIONAL SPECIALISTS

The outstanding feature of the Keele project, its signal success, was the Cadre of Organizational Specialists. The Cadre weathered, year after year, difficulties that have scuttled many other organizational innovations. It survived the departure of the trainers from CASEA. It survived the replacement of its coordinators and the annual turnover of other personnel in its ranks. It survived, for several years, the departure of the first superintendent and his replacement by a person unsympathetic to the Cadre. It survived, for several years, with little or no financial support.

We are especially proud to point out that the Keele Cadre did better than we did. Once a team from the Keele Cadre had made entry into a school, its average stay there was longer than CASEA's and its effects often better. There were three schools in Keele that were happy to see us depart. But every one of those three at some later time invited the Cadre to give them consultation or training, despite the fact that many of the people were aware that the Cadre had received its initial training from us.

Finally, we point out that the elementary schools with the larger amounts of training that figured so prominently in our study received those larger amounts much more from the Cadre than from CASEA. The Cadre did all the training in the later years covered by this report. Even in 1969-70, the Cadre put more person-hours into the work with schools wthan we did. The stellar school K12 received many more person-hours of training from

the Keele Cadre than from us. In brief, when we have pointed to the high scores of the schools with larger amounts of training, and when we have pointed to schol K12 at the top of list after list, we have pointed much more to the work of the Keele Cadre than to our own work. When, in this book, the effects of OD training have stood strong and proud, there also has stood the Keele Cadre of Organizational Specialists.

Part IV

THE DETAILS

Appendix A

Costs and Savings

Establishing and maintaining a cadre of organizational specialists requires only a tiny fraction of the budget of a school district—perhaps one tenth of one percent. Other costs, however, are also likely—costs of stress on people, of confusions while new norms are growing, of a temporary drop in productivity of some persons while new roles and time allocations are being worked out, and the like. We believe, of course, that the benefits of a cadre far outweight its costs.

We hope this appendix will be useful to people who are thinking of establishing cadres in their own districts. The information in this appendix comes from our own experiences, augmented by data from cadre coordinators of our acquaintance.

COSTS OF DIFFERENT METHODS

A cadre of organizational specialists is not, of course, the only way a district can maintain a capacity for organizational development services. The district might contract with outside consultants, or it might employ fulltime OD professionals on its own staff. We think that the cadre is the most cost-effective method—and has other advantages as well—but we provide here some comparative costs for districts contemplating such a decision. For purposes of illustration, we base our figures on estimates for a medium-sized district (such as Eugene), with perhaps 20,000 to 30,000 students, 45 to 60 schools, and 1,000 to 1,500 professional staff. We begin with costs for maintaining a cadre.

Table A-1, adapted from Arends and Phelps (1973), shows our estimates, in 1979 dollars, of what it might cost to maintain a cadre in a medium-sized school district.

Table A-1

Estimated costs of maintaining a cadre of organizational specialists for one year

Coordinator's Salary (half-time)	$12,000
Secretary (half-time)	6,000
Fringe benefits on salaries (20 percent)	3,600
Substitutes for cadre members (80 days at $35 per day)	2,800
Consultants for cadre self-renewal	2,500
Supplies and materials	1,000
	$27,900

The figures in Table A-1 represent something of a composite from several sources. For example, in one district, the actual cost was $27,650 for one year; in another district, the cost was $23,825 for one year and $28,035 for the succeeding year.

We should make some comments about the assumptions upon which our estimate is based. First, we assume that one professional person will devote one-half time to the task of coordinating the cadre. That time allocation has been true of almost every cadre with which we are familiar. Second, we assume that cadre members will receive some released days to conduct cadre business; substitutes must be hired for released teachers. One might also want to add the indirect or in-kind costs of time that other kinds of cadre members take from their regular jobs: cadre members such as counselors, administrators, and others for whom substitutes are not ordinarily hired. Third, we assume that an outside consultant (or consultants) will be hired to facilitate cadre self-renewal sessions and to continue training cadre members in organizational development skills. The estimate given for that is based on approximately eight days of consultation at $200 per day, plus expenses. Finally, we have not included in the budget funds for evaluation, because we assume that districts will provide those services from operating expenses.

How does the cost of a cadre compare with other kinds of consultation for organizational development? Such costs are hard to estimate. Instead of maintaining a cadre, a district might hire outside consultants for 120 days of consultation at $200 per day, or $24,000; travel, lodging, and other expenses might add as much as $5,000 to that figure. As another alternative, a district might maintain one full-time internal professional OD consultant; the cost of doing that would be about $24,000 in salary, plus $4,800 in fringe benefits, and perhaps another $7,000 in secretarial services, supplies, travel, and the like.

The vast majority of school districts, of course, invest nowhere near that amount of money in their own self-renewal. Miles, Fullan, and Taylor (1978), in the only national study of the use of OD in schools, report much more modest expenditures for OD consultation. They estimate that the dollar cost of most OD programs is roughly one-half of one percent of the total operating budget, equivalent to what is usually spent on in-service education. Time costs, they note, are more substantial, perhaps a minimum of ten days annually per person involved; those costs can be expected to continue for a minimum of three years for useful effects to be experienced, and five years is more likely for thorough institutionalization to take place.

Miles, Fullan, and Taylor note that districts that relied on outside consultants in fact used them very little; three days was the median number of days of consultation provided by outsiders. Insiders were used much more, with a median number of 15 days (with one district approaching 200 days). The insiders were primarily line managers with little or no formal or informal training in the conduct of OD programs and little or no linkage to other OD professionals.

About half the districts surveyed had district-level coordinators, an OD steering group, and released time available to support the effort. The median amount spent on OD efforts was between $5,000 and $10,000 annually, but time costs were more substantial—about ten days per year for at least a quarter of the total staff. In short, most OD efforts in schools have been much more modest undertakings—in terms of resources expended and gains received—than the kind of consultation that is provided by a cadre of organizational specialists.

We do think that the cadre is a cost-effective way to provide for organizational development consultation in a district—the costs of maintaining a cadre in a medium-sized district are roughly $27,900 for one year, as opposed to perhaps $29,000 for a comparable level of effort from outside consultants and perhaps $35,800 for one full-time internal consultant.

We also think that the cadre is a more efficient way to provide organizational development consultation. Cadre members generally have more ready access to all parts and levels of the system because of their established roles and identities within the district. They have a greater store of knowledge about the district, and therefore need to spend less time becoming familiar with who's who and how things are done. They have more legitimacy among members of the system. Further, their services are more flexible. For example, in Eugene, where the cadre has successfully provided OD consultation to many schools, cadre members often find themselves called back to a school for a short meeting with a principal to plan the agenda for an upcoming faculty meeting or to provide other similar services. An outside consultant would be forced to charge a full day's fee for a service such as that and the cost would soon become prohibitive.

We included an estimated cost for one full-time internal professional, but we do not think that one person can function effectively in that role. The tasks of direct consultation, teaching courses, and coordinating the work are simply too great for one person. One person simply cannot keep in touch with the many sub-groups that need close consultation. (To take one small but practical example, in most school districts, many schools hold faculty meetings on the same day of the week; the single person can only be in one place at one time.)

We now turn to considerations of starting up a cadre of organizational specialists.

ESTABLISHING A CADRE OF ORGANIZATIONAL SPECIALISTS

A district may decide to institute a cadre for one of two reasons: first, to satisfy a general need for organizational improvement; second, to help meet a specific problem or achieve a specific goal. In Keele, the goal was to clarify roles and communication within the district; in Buffalo, the goal was to aid the desegregation effort; in Boulder, curriculum change, in Cupertino, consolidation of schools resulting from declining enrollments. Whatever the beginning reasons, certain conditions make it easier to establish a well-functioning cadre. Because we discussed the conditions

favorable to establishing a cadre in Chapter 2, we will only note them here and refer the reader to that chapter for a fuller discussion.

Goals for establishing the cadre need to be clear and shared by the greatest number of people possible. Adequate financial support must be provided to support the cadre, to commit the district to using its services, and to signal the district's commitment to the new endeavor. Support from the school board, central office administration, building principals, and other important groups in the district is essential. It is not necessary that they understand the theory and technology of OD, only that they be aware of the nature of the cadre's work and some benefits of its services.

Methods of recruiting and training cadre members will vary from district to district. Recruiting requires some time on the part of the recruiting committee and some time with applicants explaining the purposes and nature of the cadre, but recruiting is almost a negligible portion of the cost of starting a cadre.

Training the new cadre members should be done by experienced consultants, and that requires a more substantial cost. For up to 25 cadre members, three trainers in the initial training event should be sufficient.

Names and qualifications of consultants may be obtained from the sources listed below. Alternatively, contact one of the cadres listed in the introduction to Part I and ask their recommendations.

National Training Laboratories
P.O. Box 9155 Rosslyn Station
Arlington, Virginia 22209

International Association of
Applied Behavioral Scientists
6170 East Shore Drive
Columbia, South Carolina 29206

Program on Strategies of
Organizational Change
CEPM
College of Education
University of Oregon
Eugene, Oregon 97403

Northwest Regional Educational
Laboratory
710 S.W. Second Avenue
Portland, Oregon 97204

OD Network
1011 Park Avenue
Plainfield, New Jersey 07060

The cost of training cadre members will vary with the method used. The method we followed in Keele and Eugene involved some three weeks of training during a summer, followed by several sessions during the school year. Other cadres have used different patterns. In Cupertino and Boulder, for instance, the training began with several half-day sessions during the spring of one school year, followed by a week's training during the next summer and follow-up sessions during the succeeding school year. The costs of the method used by Boulder and Cupertino were somewhat lower than the costs in Keele and Eugene. Nevertheless, we give the figures below for the Keele-Eugene method because they probably represent a top limit of the amount of money a district should expect to spend.

Table A-2

Estimated costs for initial training of a cadre of organizational specialists

Consultant fees (based on three trainers at $200 per day for three weeks)	$ 9,000
Follow-up consultation (based on three consultant-days per month for one school year)	5,400
Salaries for trainees (based on a summer pay rate of $8 per hour for 25 persons for 15 days	18,000
	$32,400

Additional costs may be incurred through materials, rental of the training site, cost of meals and lodging, and expenses for consultants.

As we indicated above, these figures may well be on the high side. The Boulder cadre invested something on the order of $9,000 in launching the cadre, while the Cupertino cadre spent perhaps $6,000 in the initial phases of the cadre's training. One cadre coordinator estimated that perhaps $10,000 should be allocated for start-up costs. Because there are so many variables involved, we hesitate to assign a dollar figure to an estimate of starting a cadre. However, a district should estimate that the probable cost of launching and initial training of the cadre would fall between $10,000 and $30,000.

As we have noted, we offer these estimates most hesitantly. We have stated the costs on the high side to give districts an estimate of the maximum they might have to expend; we think that the actual costs might well be substantially lower. In general, we think that the cost of establishing a cadre is roughly equivalent, say, to hiring two beginning teachers, and the cost of maintaining it is roughly equivalent to maintaining one director-level position.*

Non-Dollar Costs

Starting a new endeavor such as a cadre of organizational specialists incurs costs that cannot be measured in dollars. Since a school district has only a limited amount of energy and resources, choices must be made. Investing money in a cadre probably means foregoing other programs that might have been chosen such as curriculum revision, a new safety program, more portables for overcrowding, or the like.

Any innovation, especially a large-scale one, causes a certain amount of disruption and readjustment during the transitional period. Change is always painful to some degree.

But the pains can purchase a good profit. We can buy greater satisfaction in the work we do with our colleagues if we are willing to pay the cost in admitting to certain ineptitudes, learning some new role patterns, and

*To make another sort of comparison, the management firm's fee for its study of the Keele district in 1967—the report which, in part, led to our intervention—cost $70,000. The same report today would cost at least $200,000. Yet that report was outdated and essentially useless within a couple years. The same dollar figure would sustain a cadre for more than seven years.

perservering in the face of rebuffs. (Conversely, we can avoid risk, rebuff, and stumbling relearning if we are willing to pay the price in joyless work and in shrivelling withdrawal from our colleagues.) To the extent that members of the organization are able to uncover their human resources, despite the risk of exposing the long resentment of an unproductive task or the grief of revealing a talent long wasted, the work will get done more surely. In short, we can often purchase longer-lasting satisfactions with shared pain than we can usually buy with hidden pain.

POSSIBLE SAVINGS

It is not easy to put a dollar value on many of the kinds of work a cadre does. One reason is the intangibility of many of the benefits. Another is the difficulty of ascertaining the proportion of an improvement that should be credited to the help of the organizational specialists. Still another is the lack of appropriate record-keeping by school districts. Nevertheless, we shall give several examples of possible savings.

District Budgeting

The Organization Development Unit of the York County Board of Education (Ontario, Canada) has told how OD methods have helped in managing the finances of their district.*

Savings on textbooks. The York County Unit undertook OD training with top administrators and others in the district, and found that the new collaborative skills enabled the district to make better use of its financial resources. One instance arose when it was discovered that some schools were discarding textbooks while other schools were ordering the same titles new. By shifting books among schools, instead of discarding and ordering the same titles simultaneously, the district realized a savings of some $35,000.

Maintenance. When custodians were included in the process of planning maintenance schedules, the district found a way to save $2,600 in grass cutting alone.

Salaries. The district was faced with the need to increase salaries but still stay within a limited budget. Over the course of three years, the district found ways to increase salary costs and cut other kinds of costs. Starting from a position in which the district had only average professional salaries, but higher than average costs for other items, it moved to a position of being able to offer very high salaries while reducing its other kinds of costs to way below average.

Staff Turnover

It is widely known in industry that productivity is lost during the period of breaking in when a new employee must replace a departed one. Current

*Recounted by Duffin, Falusi, and Lawrence (1972). The Organization Development Unit is not a *cadre* in our sense. We include their experience here because it exhibits dollar savings that were achieved in their district. Their article makes it plain that their methods were very similar to those of our cadres.

estimates in industry are that the costs of recruiting and training a new person—counting lost time in productivity and training expenses— are aqual to about one year's salary for that position. Surely, there is some reduction in productivity or effectiveness when one teacher leaves and a new one comes in.

It is possible that the working relations among staff can become sufficiently attractive as a result of OD consultation that more people will want to stay with the school longer. A suggestive bit of data comes from an OD project we carried out in a junior high schol in the Northwest in 1967-68. In July of 1968, we compared resignations from that school, Highland Park, with the three other junior high schools in its district. Table A-3, taken from Schmuck and Runkel (1970, p. 89), suggests that the OD training at Highland Park reduced the causes that would otherwise have spurred staff to resign.

Table A-3

Resignations from the staff at Highland Park and at other junior high schools of the same district as of July 1968

School	Total teaching staff	Resignations	Percent
A	53	9	16
B	47	5	10
C	50	5	10
Highland Park	52	2	3

We have found it impossible to estimate the costs of replacing a teacher. After consulting with knowledgeable people in many agencies, we were simply unable to come up with a dollar figure. In contrast, it is easy to determine the cost of replacing an employee in private industry.*

We do have one bit of data that argues that turnover of school staff can have a significant cost. Murnane (1975) measures teachers' effectiveness by their students' gains on the Metropolitan Achievement Tests of reading and mathematics. He found that teachers' performance thus measured improved dramatically between the first and third years of teaching. We have no idea how Murnane's findings—obtained in second and third grades in predominantly black schools in an Eastern city—would compare with other sorts of schools. Yet his findings do corroborate the common wisdom that it takes a teacher approximately three years to learn her or his craft and become truly effective in affecting student outcomes. There

*For example, Hall and Hall (1976, p. 18) say, "Michael Alexander of Touche, Ross, and Company calculated in 1973 that the total cost (including recruiting expenses, training, reduced performance during orientation, and so on) of replacing a manager was $25,000 to $30,000. After three years of inflation, that figure might be closer to $40,000. Therefore, if your company hires 100 new MBAs this year and loses 25 of them in the first year, that first year of 'reality shock' may be adding $1,000,000 annually to your operating expenses."

may well be a way to translate that difference into dollar figures, but we shall not attempt it here.

To take another example, Runkel (1961) found that counselors did not reach their maximum frequency of communication with teachers about matters of counseling and guidance until somewhere between their fourth and seventh years at the school.

We suspect that similar patterns are true of nearly any position in schools—people do not reach their maximum effectiveness until they have been on the job from three to five years. If consultation for organizational development helps retain mature and competent professionals, then there is a calculable dollar savings in terms of effectivenes and production.

Dealing with Innovations with Dispatch

Most major innovations are costly to install. Schools suffer losses of money and energy when they spin their wheels trying new innovations that do not succeed. As we have seen in Chapter 8, OD training and consultation helps schools put collaborative innovations into place more surely and quickly than untrained schools. Alternatively, schools with training can reach a decision to drop a proposed innovation more decisively and avoid continued expenditure of fruitless energy. Whether a school ultimately decides to adopt or reject an innovation, our belief is that OD training and consultation will help it make that decision more expeditiously —and thus at a lower cost—than without training.

SUMMARY

In this appendix we have presented our best estimates on the costs and benefits of establishing and maintaining cadres of organizational specialists. We recognize that our estimates are none too good; there are too many variables to consider, and too little reliable information to use, to make the estimates very solid. Nevertheless, our experience and that of others convinces us that cadres are a cost-effective way of providing consultation in organizational development, and that such consultation has definite, calculable benefits to districts.

Appendix B

How Good are the Data?

In one place or another, this study violated almost every canon of "good" research design laid down in most textbooks on method in social science. We explain here the reasons we think you should take the study seriously anyway.

POPULATION AND GENERALIZATION

We hope the findings of this study will be useful to school administrators and to consultants who contemplate using training and consultation for organizational development in schools and school districts. We hope they use our findings as hypotheses about what they might find in their own school or district. We hope they do *not* use our findings as *predictions* of what they will find. To put it another way, we hope they use our findings as warnings or encouragements (as the case may be) about what they *might* find, not as guarantees of hard or easy sledding.

Unlike many studies in social science, this project was not an inspection of the ways existing social processes function. Rather, it was an experimental trial of the ways schools *can* function when they undertake to do things differently. The purpose of the project was not to report that in so-many percent of schools, something is done in X manner. And its purpose was certainly not to conclude that because something is done in X manner in most schools, that is the only way it *can* be done. On the contrary, we hoped to report, and did, that despite the fact that most schools do things in X manner, it is possible for them to do it in Y manner.

We cannot predict what might be most likely to occur in school districts we did not study, because we did not draw a random sample, and our sample was too small even if we had done so. But we wouldn't want readers to think we *should* have attempted a random sample; we did *not* hope to say something "on the average" about schools or districts in general. We *did* want to say, "Under the kinds of conditions we specify here, a good bet for a hypothesis to try at the next school where you apply OD is _____ _____."*

*For a longer discussion of subtleties in the design of field experiments, see Runkel (1978), Chapters 4 and 5 of Runkel and McGrath (1972), and Chapter 11 of the *Second Handbook*.

Volunteering

Researchers often warn against drawing conclusions from studies of volunteer participants. In the case of our study, the warning would go something like this: "You gave training to a district and to schools who volunteered to undergo the training. But how do you know how a district or a school would react to the training if they had not volunteered for it?" The answer is that we believe we already know. They would react badly. We have had experience—more than we would like—with individuals who have felt pressed into participating in a project. Those individuals have invariably reacted unproductively to the consultation and training. That experience and our theory both argue that OD consultation or training of the interpersonal sort should be undertaken only with volunteers. Most non-volunteers will profit less from it or not at all. In effect, then, volunteers are our population to be studied.

Comparison Schools

We wanted to compare the schools in which we or the Cadre conducted OD interventions with other schools. We chose, as the best comparison, schools in the same district and then (to increase the number of schools) schools in districts of similar size in the same region, also on the outskirts of the metropolis. We did not try to match schools any more precisely than that, because to have done so would have cut the number of available schools severely.

The number of comparison schools varied from one analysis to another. Often there were eight or ten comparison schools, sometimes more. Even when comparison schools were few, similar analyses almost always showed similar patterns of results.

In the more important of our analyses, we performed identical analyses with data from two, three, or four years. But a school in a particular category in one analysis was not necessarily in that same category in the next analysis. For example, a school could be above average on Communication-during-Emotion in one year and below average on that test in the next year. The fact that schools moved to some extent from one category to another gave us some control—a sort of counter-balancing—of characteristics that schools might bring with them into a particular category.

All in all, considering the repeated patterns of results over small or large clusters of schools, over several years of data, and while particular schools moved from one cluster to another, we believe the patterns of results to be fairly reliable, though we cannot put a number on the reliability.

Social Trends

In doing research in the natural setting, one must always worry whether the outcome one observes stem from natural events rather than from one's own interventon. We have noted, for example, that there was a strong pressure in 1968 and 1969 in the Northwest for schools to undertake team teaching and similar innovations. We have also noted fairly constant

pressure from the political right wing demanding that the schools stay away from sex education, sensitivity training, counseling students about emotional matters, and the like. Those environmental events probably affected all the schools in our study in Keele, Abington, and Findlay more or less equally. That is, we have no reason to suspect that some environmental events systematically affected trained more than untrained schools, or vice versa, to dramatically determine our results. The change of superintendent, in contrast, was a unique event during our study, and surely had some significant effects in Keele—we know it had significant effects on the Cadre. There were no doubt other environmental events about which we know nothing that had some effect, we cannot know how much, on some of the outcomes. We could tell nothing from examining scores on questionnaire items over the four administrations. Some items went up, some down, and some oscillated. We could see some effects presumably due to training, but we could find no patterns that hinted at environmental effects.

EXPERIMENTAL DESIGN

As we explained in Chapter 4, we selected certain schools in Keele to be trained and then sought to enroll every other school in the three districts as a comparison school. Most joined the project. We did not lay out an experimental design and then select schools to fit the design exactly. We of CASEA decided in advance that we wanted to conduct training with two elementary schools, one junior high, and two high schools. Beyond that, our selection of schools was more opportunistic than planned.

The result was that our study contained no simple experimental design. As more schools undertook training from year to year, and as schools shifted in their characteristics from year to year, the resulting "design" (that term connotes more planning that was the case) became complex overall, but several simple designs were embedded within it.

Because we collected data in the spring of each year (except 1971), because we or the Cadre conducted training between data-collections, and because a number of schools that never received training also provided data, it was possible to use the logic of comparing schools that received training with those that did not, and we could sometimes make that comparison both before and after the training.

We did not, however, separate our data to analyze a series of small experiments of that kind. We had too few schools, especially when we were considering only the elementary schools within the Keele district, to give us stable results. Instead, in carrying out the analysis of each year's data, we put all schools that fit a category into it, regardless of the category the schools had been in the year before and regardless of whether the school had existed the year before. Unlike a standard pretest-posttest-with-control-group design, our design could not maintain the same membership of schools in each group from year to year. We consider it a strength of the data, therefore, that the pattern of results was as uniform as it often was from year to year.

As well as considering our design to have been a jumble of commingled pretest-posttest-with-control designs, we can also consider it to have been a time-series design, or "longitudinal" as it is often called, since we took data from schools at least four times over four years, and from the Cadre sometimes as often as every week. But the design was not a "pure" times series, either. Indeed, the design was a mongrel no matter how one views it. But it was suprisingly sturdy, as a mongrel sometimes is. It delivered a surprisingly coherent pattern of results from surprisingly little "treatment" (amount of training) and from fewer units of analysis (schools, in this case) than most designers of "pure" or "true" experiments would prefer.

One clear weakness of Chapters 5 through 8 is the fact that they are not tied together as strongly as they might be. It is true that they all report effects of training, that more than one chapter reports effects of different amounts of training, and that more than one chapter reports findings concerning Communication-during-Emotion. But the effects of the tests would be clearer if we had thrown all of them against one another in some way. We could not have analyzed the data by breaking schools into high and low on one variable, breaking those clusters on another variable, then on another, and so on, because we did not have enough schools. But we might have compared schools on more variables, using variables two or three at a time and overlapping them from analysis to analysis. In exculpation, we can only say that we ran out of funds before we ran out of ideas for analysis. We orginially conceived the analysis of innovations in Chapter 8, for example, as an exploratory first-run through the data. But we couldn't make a second run, and we didn't want the findings (which we think important) to lie on a dusty shelf just because the analysis was not as elegantly done as it could have been. The two time-consuming revisions of the manuscript after Document ED 111 107 were done entirely in our spare time.

EFFECTS OF TRAINING

Most of the time, we have written as if the OD training-and-consultation that we and the Keele Cadre gave was of uniform quality. We have written as if we expected ten hours of training we gave at one school to have the same effect as ten hours at another school, and as if we expected twenty hours of training to have the same *kind* of effect as ten, but simply "stronger" in some sense. Obviously, neither training nor consultation was of uniform quality. The facilitation we and the Keele Cadre provided surely varied from time to time and from school to school in its composition and in its effect. If that variation was too great, we would have to worry that the trained schools really got two or more different kinds of intervention. We would have to worry that the different outcomes were not due to amount of training, or to the ability of the staff at Communication-during-Emotion, for example, but due to the different kinds of training.

There was some inevitable variation in the style of intervention from school to school. The training-and-facilitation varied because it was done sometimes by one sub-team of facilitators and sometimes by another and

because diagnosis varied somewhat. It varied in its proportions of training in communication, of training in problem solving, of team building, and of process consultation during otherwise ordinary work.* In some schools all or the bulk of the facilitation was done with the staff as a whole, but in a few schools the training or consultation reached only a portion of the staff. It is unarguable that the ten hours one school got from CASEA or the Cadre differed in observable ways from the ten hours another school got.

One notable difference in what schools got was connected with how many hours they got. The schools that got the greater numbers of hours got the greater proportions of those hours from the Cadre (see Table 5-1). In other words, the schools that received the greater amounts of training were, in general, influenced over longer periods of time by the Cadre than by CASEA.

On the other hand, there were forces at work to make the nature of the training and consultation somewhat uniform, no matter who provided it. During the Keele project, we were all greatly influenced by Richard Schmuck. He was our chief designer of training sequences, our chief guide to proper conduct in the field, and our "model trainer." That is not to say that we were all docile and obedient. All members who were to act in the training role in a forthcoming session were expected to contribute to its design. There were many long and heartfelt arguments about the components and sequencing of training activities, assignments of individuals to subtasks, timing, and so on. But those very arguments served to clarify the extent of deviation we would and would not permit from the chief norms and values of the CASEA crew.

All new members of the CASEA crew came under the strong influence of Schmuck, Runkel, and the senior research assistants as they worked their way toward full status as co-trainers. That socialization process made members of the CASEA crew largely (though not wholly) interchangeable as members of trainer-teams that went out to schools and other parts of the district.

The Keele Cadre of organizational specialists were influenced similarly. They received their initial training from the CASEA crew, with Schmuck and Runkel as the key leaders. One of our research assistants left our employ, took a job as counselor in the Keele district, and became an active member of the cadre; later, he became its coordinator. All those influences resulted in much common content in training events—especially certain interpersonal communication skills, exercises for role clarification, and a sequence for group problem solving. They resulted too in common norms governing relations between consultant and client.

Perhaps the easiest way to describe the degree of uniformity and variation that characterized the interventions by CASEA and the Cadre is to say that we all shared a common culture of facilitation. There were some

*See appendices 5-A and 5-C of Document ED 111 107 for details on amounts of training, the composition of the trainees, the consultants or trainers, the spacing of the sessions through the calendar, and the content of the facilitation.

things we all felt it necessary to do, some things we felt free to do, and a great many things we wouldn't be caught dead doing. The best records of the kinds of things we did are Appendices 2-A, 5-A, and 5-C of Document ED 111 107 and parts of the *Second Handbook*.

Was "the treatment"—the application of training and consultation—so varied and unspecifiable that it is hopeless to claim that any outcomes were caused (or partially caused) by the training and consultation? We think not. The "treatment" is reasonably well specified in the sources we cited just above. The lore contained there is well enough understood by people who consider themselves consultants in organizational development that the some of them have used the precursor to the *Second Handbook* and the associated reports of projects as guides and have carried through similar work of their own.

Did Training Cause the Outcomes?

Did the elementary schools in Keele that received training get higher scores on our outcome variables because they received training, or for some other reason? Did they get higher scores, for example, because they were the kind of school that would get higher scores without training? Several kinds of evidence argue that the training did indeed cause the outcomes.

We have displayed in this book several analyses in which elementary schools showed some capability or at least readiness for organizational change. But in each analysis, schools with training reached skills that untrained schools did not reach. Two analyses are especially notable. In Chapter 6, we looked at a collection of schools all of which had seriously undertaken to establish collaborative structure. Indeed, soon after those schools had adopted the new structure, they were showing increased skill in communication. But two years later, the schools that had received OD training were, in general, even more skillful, while the schools that had not received training had fallen back about to their original levels.

In Chapter 8, we examined a different collection of schools that had made a serious effort to establish team teaching. We saw that six of seven trained schools succeeded on a minimal criterion, but only three of sixteen untrained schools.

Another alternative hypothesis might be that the trained schools came to understand better than the untrained schools what we were hoping to achieve, and gave us favorable answers on the questionnaires just to be nice to us. But we told in Part I how some people in some of the trained schools came to feel hostile toward us, and told us so. Indeed, in one of those schools where a number of people hoped we would go away, the favorable outcomes spilled over into classrooms and had the effects on students described by Bigelow (1971).

THE SCHOOL AS UNIT OF ANALYSIS

We have not reported on the behavior of individuals in the schools we studied. We were interested in the capabilities of schools, not of individuals.

We think there were two reasons for the clarity of the results. First, we wrote the questionnaire items with the thought always in mind that we were going to use the responses as indicators of the functioning of the staff or school as a whole, not as indicators of the functioning of individuals. And we tried to ask about actions in the school that would be easily visible to many of the staff. Not every item had those characteristics, but the bulk of them did. The result was that staff functioned as reporters about the functioning of the school as a whole. Apparently, even when proportions of staff as low as 40 percent returned questionnaires, we got fairly accurate estimates of conditions in the school as a whole.

The second reason for the clarity of the results, we think, lay in our selection of the questionnaire items. We selected most of our items from other studies in which the items had been the media through which outcomes stood forth that had been predicted from theory. The items had proven themselves sensitive, in other words, to the variables we wanted to detect.

Even though our items showed promise at the outset, we culled them again before our final analyses. We eliminated items with low response rates because differences could be due to the responses of one or two individuals and would therefore be unreliable. We eliminated items with small response ranges because they could not discriminate between schools. We eliminated a few more items because it was apparent that the respondents had not understood them.

PATTERN

Our chief claim to validity lies in repeated pattern. We have called attention to repeated patterns throughout Chapters 5 through 8. As only one example, scores on the tests of Communication-during-Emotion behaved much as we expected even when we used different tests of that variable, when we compared outcomes on that variable with outcomes on a series of other variables, and when we took data in different years and from different assortments of schools. Finally, though the data are by no means unassailable or definitive, they do fit the main outlines of our theory.

Appendix C

The Computer Program for Nonmetric Multidimensional Scaling

How did we calculate and compare the similarities and differences among schools by their scores on the tests? We have already indicated that we wanted to discover more than merely which schools had the highest scores. The method we chose to use in our analysis was that of nonmetric multidimensional scaling. Underneath that polysyllabic label is a rather simple idea. First, calculate some sort of index of similarity between every pair of schools (such as the correlation over pairs of test scores). Then, translate similarity into distance; that is, let distances in space correspond to those measures of similarity. Specifically, let two similar schools be represented close together and let two dissimilar schools be represented far apart.

Suppose we use gumdrops to represent schools and attempt to arrange them with similar gumdrops close together and dissimilar gumdrops far apart. To make the distances between them more concrete, let us use toothpicks to connect the gumdrops, using shorter toothpicks between gumdrops that are more similar and longer sticks between less similar gumdrops.

There are some technical difficulties in fitting this spatial model together. Suppose our indices of similarity among the gumdrops are based upon color. We place an orange and a red gumdrop close together joined by a short toothpick. Then we add a blue gumdrop using two long toothpicks, since it seems very dissimilar to both orange and red. Then we want to place a purple gumdrop. We want it to be very close to both blue and red, and yet these two gumdrops are very far apart. The problem is that if the interrelations among the gumdrops (or schools) are complex, one might find, after placing a number of sticks, that a certain distance is too short or too long to be represented by a stick that *also* must fit in the already existing arrangement. One can see that with a large number of colors or with *striped* gumdrops, the interrelationships among the gumdrops could become extremely complex.

One way to help solve the technical problems involved in arranging gumdrops would be to create a construction of three, four, five, or even more dimensions. Then we would be able to put gumdrops in places that would satisfy more of the required distance relationships.

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Another way to solve the problems involved in arranging the gumdrops would be to stretch some of the sticks and squeeze others, so to speak, while still maintaining to some acceptable degree the chief pattern among the gumdrops; that is, we could change the distances between the gumdrops a little without changing the *relative order* of the magnitudes of the distances. That is, if one index of similarity between two gumdrops (or schools) were larger than another, we could try only to maintain the "larger-than" relationship, without trying to keep the spatial distances in exactly the same ratio as the original numerical indices of similarity. Several methodologists in the social sciences have indeed invented methods of representing similarities that combine those two solutions to the problems. In one class of the mathematical methods, the computer makes trial arrangements (of schools, for example) in one, two, three, or more dimensions and for each arrangement tells how good the "fit" is—that is, how well the trial arrangement represents the similarity measures in the original data. The user then can choose from among the trial arrangements how close a fit he or she will need. Mathematical methods with the features just described are called nonmetric multidimensional scaling because they do not use actual numerical measures of similarity (number of inches, so to speak) but instead only the *order* of measures.

We chose a nonmetric method of arranging our schools to ascertain which schools grouped or clustered together. The particular computer program we chose was the Guttman-Lingoes MINISSA-I(M). For documentation and background on the MINISSA program, see Guttman (1968), Lingoes (1965, 1966a, 1966b, 1967, 1968, 1971), Lingoes and Roskam (1971), and Roskam and Lingoes (1970). The more important options of the program were set as shown below; the labels of the options (e.g., 4b and MIND) are those used in the preface to the program itself.[6]

4b. Program determines the minimum number of dimensions (MIND=0).
4c. Largest number of dimensions set at three (MAXD=3).
4d. Inputs are correlation coefficients—that is, similarities (ISIM=1).
4g. Kruskal's stress not to be minimized (IFGLK=0).
4h. Configuration not to be input (IFCONF=0).
4l. Euclidean metric (IFE=0).

Spence and Ogilvie (1973) have offered a method of ascertaining the likelihood that a solution by nonmetric multidimensional scaling has been generated by random data. The method makes use of Kruskal's (1964) stress coefficient. By the method of Spence and Ogilvie, our plots for tests A, B, and C and also those for tests D, E, and F have a chance of being random plots somewhere in the millionths. For example, for a plot of Keele elementary schools in the years 1969-70 combined, the stress value three standard deviations beyond the chance stress value is 0.0189. Spence and Ogilvie recommend rejecting the chance hypothesis if our obtained stress value is less than the value three standard deviations out. Our obtained value was far below the criterion; it was 0.00081.

Appendix D

Standard Scores on Test C of Elementary Schools in Keele Above and Below the Medians on Tests A and B

Placement on test A	Year	Placement on test B: Below median, Untrained		Below median, Trained		Above Median, Untrained		Above Median, Trained	
Above median	1969	AB/07	−.78			AB/12	1.91	AB/11	7.9
		AB/09	.41						
		AB/10	−1.34			BA/03	1.07		
	1970	AB/06	.13	AB/13	−1.08			AB/11	.34
		AB/09	.64					AB/12	2.80
								BA/05	−.30
	1972	AB/03	1.31	AB/05	−.40			AB/02	.81
		AB/07	−.98	AB/14	.28			AB/12	2.57
								BA/11	−.27
								BA/15	−1.22
Below median	1969	AB/08	−.47			BA/01	.19	BA/05	−.50
						BA/02	−1.79		
		BA/06	.54			BA/04	−.02		
	1970	AB/01	−1.57			BA/03	.34		
		AB/02	.02			BA/04	.11		
						BA/07	−.31		
		BA/08	−.71			BA/10	−.41		
	1972	AB/09	−.56	BA/13	−.82	BA/04	.79		
		AB/10	−.69			BA/06	.39		
		BA/01	−.97						
		BA/08	−.25						

Notes: "AB" indicates that the school had a higher standard score on test A than on test B; "BA" indicates the reverse. The number following the virgule is the number of the school.

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Appendix E

Percentages Naming Innovations

In Chapter 8, the percentage of persons in a school naming the several kinds of innovation could sum to more than 100, because each person could have named as many as four kinds of innovation. But it was also possible for a single category to accumulate a percentage reaching above 100. The reason is that we began with 49 categories, but later threw those into five larger categories. We counted instances of the larger categories simply by counting instances of a category among the first-mentioned innovation, adding those among the second-mentioned, among the third, and among the fourth. As a result, what we are calling the "cumulative percentage" is at least as large as the percentage of respondents mentioning a category, but it is enlarged somewhat by counting more than once those respondents who mentioned more than one old (finer) category that was included under one new (larger) category. The "cumulative percentage" is a count of *mentions* divided by the number of teachers-and-others. It is not actually a percentage. The numbers should be interpreted as an abstract index and should be compared with one another for relative size. The figure of zero has the usual meaning, but the figure of 100 is merely a point on the scale with no special distinction. In brief, the cumulated percentage is a weighted indicator of the density, so to speak, of the perception of a particular kind of innovation in the school. Further detail about the calculations appears in Appendix 10-A of Document ED 111 107.

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